

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

COMPLAINT
JURY TRIAL
DEMAND

Civil Action:

NORTHWEST BIOTHERAPEUTICS, INC.,

Plaintiff,

- against -

CANACCORD GENUITY LLC, CITADEL
SECURITIES LLC, GI EXECUTION
SERVICES LLC, GTS SECURITIES LLC,
INSTINET LLC, LIME TRADING CORP.,
SUSQUEHANNA INTERNATIONAL
GROUP LLP, and VIRTU AMERICAS
LLC.

Defendants.

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Plaintiff Northwest Biotherapeutics Inc. (“NWBO,” the “Company,” or “Plaintiff”), by and through its undersigned attorneys, Cohen Milstein Sellers & Toll PLLC, and for its complaint against Canaccord Genuity LLC (“Canaccord”), Citadel Securities LLC (“Citadel”), G1 Execution Services LLC (“G1”), GTS Securities LLC (“GTS”), Instinet LLC (“Instinet”), Lime Trading Corp. (“Lime Trading”), Susquehanna International Group LLP (“Susquehanna”), Virtu Americas LLC (“Virtu,” and collectively “Defendants”), alleges upon personal knowledge, information and belief, and an investigation by counsel as follows:

I. SUMMARY OF CLAIMS

1. This case arises from Defendants’ scheme to manipulate NWBO’s share price during the period of December 05, 2017 to August 1, 2022 (the “Relevant Period”). Throughout the Relevant Period, Defendants deliberately engaged in repeated spoofing that interfered with the natural forces of supply and demand, and drove NWBO’s share price downward repeatedly over the course of the Relevant Period. Defendants’ manipulation violates Section 10(b), Rule 10b-5 and Section 9(a)(2) of the Securities Exchange Act of 1934, and constitutes fraud under New York state common law.

2. NWBO is a clinical stage biotechnology company focused on the development of personalized cancer vaccines designed to treat a broad range of solid tumor cancers more effectively than current treatments, and without the side effects of chemotherapy, through a proprietary manufacturing technology which enables the Company to produce a personalized vaccine in an efficient and cost-effective manner. The Company’s lead product, DCVax®-L, received the first-ever “Promising Innovative Medicine” designation under the United Kingdom’s “Early Access to Medicines Scheme” on September 16, 2014.

3. NWBO recently completed a 331-patient Phase 3 clinical trial of DCVax-L in the

United States, Canada, U.K., and Germany for patients with glioblastoma multiforme (“GBM”), the most aggressive and lethal form of brain cancer.

4. On May 10, 2022, positive top-line results from the clinical trial were presented at the Frontiers of Cancer Immunotherapy Conference of the New York Academy of Sciences, showing that DCVax-L had reached both its primary and its secondary endpoints with statistical significance under the Statistical Analysis Plan for the Phase 3 trial. The survival data of the trial was promising; no other GBM trial in decades has shown such improvements in both median survival and the “long tail” of extended survival in both newly diagnosed and recurrent (late stage) GBM patients. The safety data was similarly excellent, showing that DCVax-L’s safety profile was not meaningfully different than with standard of care alone. In addition to these results from the Phase 3 trial, DCVax-L is also expected to have broader value in the future, through: (i) potential combinations with a wide range of other types of treatments; (ii) potential application to *any type* of solid tumor (*i.e.*, a tumor in any tissue); and (iii) being feasible to administer in community settings (where most cancer patients are treated), as well as in major cancer centers.

5. Most recently, on November 17, 2022, *JAMA Oncology*, the highly respected, peer-reviewed cancer journal, featured an article entitled “Association of Autologous Tumor Lysate-Loaded Dendritic Cell Vaccination with Extension of Survival Among Patients with Newly Diagnosed and Recurrent Glioblastoma,” co-authored by over 70 physicians from leading institutions across the U.S., Canada, U.K., and Germany regarding the final results of the Phase 3 trial of DCVax-L. As reported in *JAMA Oncology*, the trial results demonstrated that DCVax-L was “associated with a clinically meaningful and statistically significant extension of overall survival” and “also had an excellent safety profile and noteworthy tails of long-term survival

curves.”¹ The Company believes that this is the first Phase 3 trial of a systemic treatment in nearly 20 years to have shown such survival extension in newly diagnosed GBM patients, and the first time in nearly 30 years that a Phase 3 trial of any type of treatment has shown such survival extension in recurrent GBM.

6. Despite the string of encouraging news about its lead product, NWBO’s share price has not followed suit. Quite the opposite actually—and that is not by chance. Rather, because of Defendants’ spoofing, NWBO’s share price has dropped.

7. Spoofing is a form of market manipulation that, in this case, was accomplished by placing “Baiting Orders” in the Limit Order Book² or Inter-Dealer Quotation System (“IDQS”)³ that are not intended to be executed and have no legitimate economic purpose. The purpose of these Baiting Orders is to create a false illusion of market interest (either positive or negative) that will generate a response from other market participants that the spoofers can use to their advantage. For example, if the goal of the spoofing scheme is to drive the price down, the spoofer enters

¹ Liao LM, Ashkan K, *et al.*, Association of Autologous Tumor Lysate-Loaded Dendritic Cell Vaccination With Extension of Survival Among Patients With Newly Diagnosed and Recurrent Glioblastoma: A Phase 3 Prospective Externally Controlled Cohort Trial. *JAMA Oncol.*, Nov.17, 2022, available at <https://jamanetwork.com/journals/jamaoncology/fullarticle/2798847>

² A “Limit Order Book” is an electronic list of buy and sell orders for specific securities and other financial instruments that is organized by price levels and lists the number of shares being bid or offered at each price point. The Limit Order Book reflects whether the market price for the security is moving upwards or downwards and is visible to every trader on the exchange.

³ An IDQS provides “bid and ask quotations of participating brokers or dealers, or comparably accurate and reliable pricing information, which shall constitute firm bids or offers for at least such minimum numbers of shares or minimum dollar amounts as the Commission and the registered securities association or national securities exchange shall require.” 15 U.S.C. § 78q-2(b)(2)(C). According to FINRA, Eligible IDQS include NYSE Global OTC and OTC Link LLC. Letter from J. Matthew DeLesDernier, Assistant Secretary, SEC, to Robert Colby, Executive Vice President and Chief Legal Officer, FINRA, dated June 21, 2021.

Baiting Orders to sell, to create an appearance of a downward trending market, which will then bait other market participants into entering their own sell orders to minimize or avoid suffering losses. Shortly thereafter, the spoofer will place orders to buy, or “Executing Purchases,” which are intended to be executed against the other market participants’ sell orders at the lower artificial prices prompted by the false Baiting Orders to sell. Immediately after placing these Executing Purchases to buy, the spoofer then cancels all of the Baiting Orders to sell, which completes the profitable spoofing cycle.

8. This scheme can be used multiple times during a trading day, and then repeated throughout a protracted trading period. To maximize the speed of their market access and execution of their trading strategies, spoofers typically utilize algorithmic trading programs through high-frequency trading computer systems which enable thousands of Baiting Orders to be placed in a matter of seconds and sometimes milliseconds.

9. During the Relevant Period, Defendants engaged in spoofing to manipulate the price of NWBO shares on OTC Link LLC and NYSE ARCA Global OTC, thus creating an imbalance in the market for NWBO shares and inducing other market participants to buy or sell at artificial prices. In order to carry out their spoofing scheme, Defendants placed tens of millions of Baiting Orders and executed millions of orders at manipulated prices during the Relevant Period. Indeed, Defendants engaged in spoofing on 395 of 1,171—or nearly 34%—of the trading days during the Relevant Period.

10. Plaintiff NWBO sold over 49 million shares at manipulated prices as a result of Defendants’ actions. By repeatedly and brazenly manipulating the market through their spoofing, Defendants directly impacted the price of NWBO’s shares in the market, causing Plaintiff significant losses as it sold millions of shares of NWBO stock at artificially depressed prices.

II. JURISDICTION AND VENUE

11. This Court has jurisdiction over the subject matter of this action pursuant to Section 27 of the Exchange Act, 15 U.S.C. § 78aa and 28 U.S.C. § 1331. This Court also has jurisdiction over the state law claims under 28 U.S.C. § 1367 because those claims are so related to the federal claim that they form part of the same case or controversy.

12. This Court has personal jurisdiction over each Defendant. Each Defendant either maintained its business offices and conducted a substantial part of the events asserted in this complaint in this District or directed its fraudulent activity into this market by manipulating NWBO stock on the OTC Link LLC and NYSE ARCA Global OTC, both of which are located in this District. The unlawful acts committed by Defendants had a direct and substantial impact on the market price of NWBO shares traded in this District in the United States.

13. Venue is proper in the Southern District of New York pursuant to 28 U.S.C. § 1391 and Section 27 of the Exchange Act, in that many of the acts, transactions and occurrences alleged herein occurred in this District, and all of the Defendants conducted business here in connection with the events described herein. Defendants directly or indirectly made use of the means or instrumentalities of interstate commerce including the mails in connection with the conduct alleged herein.

III. THE PARTIES**A. Plaintiff**

14. Plaintiff NWBO is a clinical stage biotechnology company focused on the development of personalized cancer vaccines designed to treat a broad range of solid tumor cancers more effectively than current treatments, and without the side effects of chemotherapy. It was founded in 1996 in Seattle, Washington, and later moved its headquarters to Maryland. NWBO is

a publicly traded company with a market cap of approximately \$870 million as of the filing of this complaint, whose shares trade in New York on OTC Link LLC and NYSE ARCA Global OTC. During the Relevant Period, NWBO sold approximately 49 million shares of NWBO at depressed prices as a result of Defendants' illegal manipulation.

B. Defendants⁴

1. *Defendant Canaccord*

15. Defendant Canaccord is headquartered at 535 Madison Avenue, New York, New York. Canaccord is a registered broker dealer that executes securities transactions on the various trading venues in the U.S., and is an independent provider of third party algorithms. As of June 2022, Canaccord possessed market making capability for over 2,500 companies.

16. Defendant Canaccord conducted continuous activity in New York, directly related to these claims, by employing high speed algorithmic computer systems to route orders and execute trades of NWBO shares throughout the U.S., including in New York, on trading venues in the U.S.

2. *Defendant Citadel*

17. Defendant Citadel is headquartered at 200 South Biscayne Boulevard, Miami, Florida. Citadel is a registered broker dealer that executes securities transactions on the various trading venues in the U.S. Founded and majority owned by multi-billionaire Kenneth C. Griffin, Citadel is one of the largest market makers in the world in a variety of markets. Citadel's automated equities platform trades over 20% of U.S. equities volume across more than 11,000 U.S.-listed

⁴ Whenever reference is made to any act, device, contrivance, or scheme to manipulate NWBO securities by any of the Defendants, the allegation is intended to also include the subsidiaries, affiliates, sister companies, agents and representatives of that Defendant, whose identities and specific involvement in this market manipulation case are unknown to Plaintiff at this time. Only after discovery is taken will their identities and involvement become known.

securities and trades over 16,000 OTC securities and executes approximately 35% of all U.S.-listed retail volume, making it the industry's top wholesale market maker. Citadel claims its "proprietary algorithms are designed to maximize efficiency by continuously optimizing order placement and accessing our principal liquidity." Mr. Griffin is also the founder and majority owner of Citadel LLC, one of the world's largest hedge funds with investment capital of over \$57 billion as of September 1, 2022, that claims to use "advanced statistical and quantitative modeling techniques to the petabytes of historical and current data we collect to identify and capture investment opportunities." In 2021, Citadel was fined \$275,000 by the Financial Industry Regulatory Authority ("FINRA") to settle allegations that it over-reported certain treasury transactions to the Trade Reporting and Compliance Engine.

18. Defendant Citadel conducted continuous activity in New York, directly related to these claims, by employing high speed algorithmic computer systems to route orders and execute trades of NWBO shares throughout the U.S., including in New York, on trading venues in the U.S.

3. Defendant GTS

19. Defendant GTS is headquartered at 545 Madison Avenue, New York, New York. GTS is a registered broker dealer that executes securities transactions on the various trading venues in U.S. GTS is a global electronic market maker. As a quantitative trading firm, GTS leverages the latest in artificial intelligence systems and sophisticated pricing models. GTS accounts for 3-5% of daily cash equities volume in the U.S. and trades over 30,000 different instruments globally. In 2020, GTS was fined by a number of exchanges a total of \$70,000 to settle allegations of a failure to comply with certain regulations regarding short sale transactions.

20. Defendant GTS conducted continuous activity in New York, directly related to these claims, by employing high speed algorithmic computer systems to route orders and execute

trades of NWBO shares throughout the U.S., including in New York, on trading venues in the U.S.

4. Defendant Instinet

21. Defendant Instinet is headquartered at 309 West 49th Street, New York, New York. Instinet is a registered broker dealer that executes securities transactions on the various trading venues in the U.S. A part of Nomura Group, Instinet offers advanced algorithmic trading strategies which are operated and monitored in real time by Instinet's global support organization using advanced reporting, alerting and control software.

22. Defendant Instinet conducted continuous activity in New York, directly related to these claims, by employing high speed algorithmic computer systems to route orders and execute trades of NWBO shares throughout the U.S., including in New York, on trading venues in the U.S.

5. Defendant Lime Trading (f/k/a Score Priority Corp.)

23. Defendant Lime Trading (f/k/a Score Priority Corp.) is headquartered at 1 Penn Plaza, 16th Floor, New York, New York. Lime Trading, which renamed itself from Score Priority Corp. in March 2022, is a registered broker dealer that executes securities transactions on the various trading venues in the U.S. It offers low latency, Direct Market Access technology, which executed over 20 billion trades and processed more than 10 billion messages last year. In 2021, Lime Trading, under its former name Score Priority Corp., was fined \$250,000 by FINRA to settle allegations that it failed to establish and implement an anti-money laundering program that could reasonably be expected to detect and cause the reporting of suspicious transactions.

24. Defendant Lime Trading conducted continuous activity in New York, directly related to these claims, by employing high speed algorithmic computer systems to route orders and execute trades of NWBO shares throughout the U.S., including in New York, on exchanges in the U.S.

6. Defendants *Susquehanna and GI*

25. Defendant Susquehanna is headquartered at 401 City Avenue, Bala Cynwyd, Pennsylvania. Susquehanna is one of the largest proprietary trading firms in the world and claims that its probabilistic thinking and game theory combined with its focus on signal detection and low-latency performance have made it one of the leading global market makers.

26. Defendant Susquehanna conducted continuous activity in New York, directly related to these claims, by employing high speed algorithmic computer systems to route orders and execute trades of NWBO shares throughout the U.S., including in New York, on exchanges in the U.S.

27. Defendant GI is headquartered in Chicago at 175 West Jackson Boulevard, Chicago, Illinois. GI is a registered broker dealer that executes securities transactions on the various trading venues in the U.S. In 2021, GI was fined \$575,000 and ordered to pay \$816,618.75, plus interest, in restitution to customers to settle allegations by FINRA that it failed to provide best execution to orders from its clients on behalf of their customers in over-the-counter securities.

28. Defendant GI conducted continuous activity in New York, directly related to these claims, by employing high speed algorithmic computer systems to route orders and execute trades of NWBO shares throughout the U.S., including in New York, on trading venues in the U.S.

29. GI was purchased by Susquehanna International Group LLP in 2014, and was previously owned by E*Trade Financial Corp. (“E*Trade”) under the name E*Trade Capital Markets. In 2014, E*Trade was fined \$2.5 million by the Securities and Exchange Commission to settle charges that E*Trade Capital Markets, n/k/a GI, ignored red flags and improperly sold billions of unregistered penny stock shares on behalf of customers.

7. Defendant Virtu

30. Defendant Virtu is headquartered at 1633 Broadway Avenue, New York, New York. Virtu is a registered broker dealer that executes securities transactions on the various trading venues in the U.S. Virtu is a global provider of market making and execution services and earned \$1.9 billion in net trading income in 2021. In 2020, Virtu was fined \$15,000 and \$107,500 by FINRA for violations of Order Audit Trail System reporting obligations and failure to establish and maintain a supervisory system, respectively.

31. Defendant Virtu conducted continuous activity in New York, directly related to these claims, by employing high speed algorithmic computer systems to route orders and execute trades of NWBO shares throughout the U.S., including in New York, on trading venues in the U.S.

IV. NWBO'S BUSINESS AND LIFE-SAVING CANCER VACCINES

32. NWBO's proprietary, breakthrough technology involves producing personalized cancer vaccines that are designed to treat a broad range of solid tumor cancers more effectively than current treatments and without the side effects of chemotherapy. NWBO's platform technology "DCVax®" uses activated dendritic cells to mobilize a patients' own immune system to attack the cancer. NWBO's lead platform technology, DCVax®-L, is designed to treat solid tumor cancers in which the tumor can be surgically removed. NWBO's additional platform technology, DCVax®-Direct, is designed to treat inoperable cancers.

33. Glioblastoma multiforme brain cancer, or GBM, is a highly lethal form of brain cancer that strikes all ages, affecting over 12,000 patients in the United States alone each year. Glioblastomas are grade IV primary brain tumors, meaning they are the most aggressive and lethal. Standard of care for treatment of GBM has been virtually unchanged for nearly 20 years. There is currently no cure for GBM. The median overall survival is just 15-17 months from diagnosis, and

the 5-year survival rate is generally less than 5%.

34. As a glioblastoma grows, it forms microscopic branches that spread and infiltrate into the brain tissue around the tumor's location. These branches make it nearly impossible to remove the entire tumor surgically. In addition, a single tumor contains many different types of cells, so a drug that works against some cells may not successfully treat the entire tumor.

35. The current standard of treatment for newly diagnosed GBM is surgery, followed by daily radiation of the brain and daily oral chemotherapy for six weeks, then monthly chemotherapy. For recurrent (late stage) GBM, there is no established standard of care. Following initial surgery, glioblastoma tumors typically recur in 6 to 8 months. When a tumor recurs, patients generally do not receive further radiation treatments as they have already received a "lifetime dose" of radiation to the brain when they were newly diagnosed. While post-operative radiation therapy and chemotherapy can prolong survival, it yields a median survival of less than one year and long-term survival is extremely rare. Further, the treatment has incredibly debilitating side effects. Overall, the clinical picture with GBM is particularly bleak: there have been more than 400 clinical trials for GBM since 2005 involving more than 32,000 patients testing diverse treatment modalities, but only one prior Phase 3 trial in that time has demonstrated a survival benefit for newly diagnosed GBM, and no prior Phase 3 trials in those decades have demonstrated a survival benefit for recurrent GBM.

36. DCVax-L—the Company's leading product—is a fully personalized immune therapy made from a patient's own immune cells (dendritic cells) and antigens (biomarkers) from a sample of the patient's own tumor. A multi-year set of doses is produced in a single manufacturing batch, which takes 8 days. The product is then stored frozen in individual doses, and is "off the shelf" throughout the treatment regimen. The doses are stored centrally and simply

taken out of the freezer and delivered to the physician when needed for the patient's next treatment. Administration of DCVax-L is quite simple for both the physician and patient: just an intradermal injection in the upper arm, 6 times over the course of the first year, and then twice a year for maintenance thereafter.

37. The Company completed a 331-patient international Phase 3 clinical trial of DCVax-L for GBM. The data collection and confirmation process for the trial was conducted by an independent contract research organization who managed the trial, in addition to other independent service firms. This process included the implementation of, and adherence to, rigorous protocols.

38. On May 10, 2022, Dr. Paul Mulholland, an independent physician who participated in the Phase 3 trial, presented the overall survival data and top-line results for the DCVax-L Phase 3 trial at the New York Academy of Sciences. In this presentation, NWBO announced that its lead drug, DCVax-L, had reached both its primary and its secondary endpoints under the Statistical Analysis Plan, with statistical significance, in the trial. No other GBM trial in many years has shown such improvements in both median survival and the "long tail" of extended survival for both newly diagnosed and recurrent GBM patients. The safety data was similarly promising, showing that the safety profile of DCVax-L was not meaningfully different from standard of care alone. In addition to these results from the Phase 3 trial, DCVax-L is also expected to have broader value in the future through: (i) potential combinations with wide range of other treatments; (ii) potential application to any type of solid tumor (*i.e.*, a tumor in any tissue); and (iii) being feasible to administer in community settings (where most cancer patients are treated) as well as in major cancer centers. The Company believes this is the first Phase 3 trial to demonstrate any survival benefit from a systemic treatment for newly diagnosed GBM since the approval of Temozolomide

in 2005, and the first Phase 3 trial to demonstrate a survival benefit for recurrent GBM in nearly 30 years. The fact that DCVax-L can potentially be applied to the treatment of any type of solid tumor is similarly groundbreaking, and would greatly expand the potential use of DCVax-L in the United States and worldwide.

39. On August 17, 2022, NWBO received approval from the UK Medicines and Healthcare Products Regulatory Agency for the Company's Pediatric Investigation Plan ("PIP"). The development, regulatory review and regulatory approval of a PIP is a pre-requisite for application for approval of a new medicine for adult patients, such as DCVax-L. The Company's approved PIP includes 2 clinical trials: one for newly diagnosed pediatric high-grade glioma brain cancer ("HGG"), and one for recurrent pediatric HGG. In each of the 2 pediatric trials, the patients will be treated with DCVax-L on the same treatment schedule as in the Company's Phase 3 trial in adult GBM patients, and the pediatric trials will use the same trial design with external controls as in the Statistical Analysis Plan for the Phase 3 trial that NWBO has completed in adult patients.

40. NWBO is currently working with teams of expert consultants on preparations for filing applications for regulatory approval to bring DCVax-L to market for patients.

41. Just weeks ago on November 17, 2022, the prestigious, peer-reviewed cancer journal *JAMA Oncology* published an article regarding the final results of the Phase 3 clinical trial of DCVax-L. The article was co-authored by over 70 physicians from leading institutions across the U.S., Canada, U.K., and Germany. The article reported that both median survival and the "long tail" of extended survival were increased in both newly diagnosed and recurrent GBM patients treated with DCVax-L. The Company believes this is the first time in nearly 20 years that a Phase 3 trial of a systemic treatment has shown such survival extension in newly diagnosed GBM, and the first time in nearly 30 years that a Phase 3 clinical trial of any type of treatment has shown such

survival extension in recurrent GBM. Specifically, median Overall Survival (mOS) for newly diagnosed GBM patients (n=232) was 19.3 months from randomization (22.4 months from surgery) with DCVax-L, versus 16.5 months from randomization in the controls (HR=0.80, p=0.002). Survival at 48 months from randomization was 15.7% vs. 9.9%, and at 60 months was 13% vs. 5.7%.

42. The safety profile of the vaccine was extremely positive as well. Unlike chemotherapy and radiotherapy, the vast majority of patients reported no serious adverse events from the immunotherapy vaccine. Out of more than 2,100 doses of DCVax-L administered during the Phase III trial, there were only 5 serious adverse events that were deemed at least possibly related to the treatment. There were 3 cases of intracranial edema, 1 case of nausea and 1 case of lymph node infection.

43. The public responded positively to the news: among others, *The Guardian* described the trial results as “astonishing”;⁵ *The Telegraph* stated that this was the “first major breakthrough for decades”;⁶ and CNBC declared that the trial offered “fresh hope” to brain cancer patients, noting that one patient in particular survived for eight more years.⁷

44. The illegal market manipulation of NWBO stock by Defendants has significantly impaired the ability of the Company to raise funds from the public markets and could impact the

⁵ Vaccine shown to prolong life of patients with aggressive brain cancer, *The Guardian*, Nov. 17, 2022, available at <https://www.theguardian.com/science/2022/nov/17/vaccine-shown-to-prolong-life-patients-aggressive-brain-cancer-trial-glioblastoma>.

⁶ Vaccine doubles brain tumour survival rate in medical breakthrough, *The Telegraph*, Nov. 17, 2022, available at <https://www.telegraph.co.uk/news/2022/11/17/vaccine-doubles-brain-tumour-survival-rate-medical-breakthrough/>.

⁷ Vaccine trial for brain cancer patients offered “fresh hope,” *CNBC*, Nov. 18, 2022, available at <https://www.cnbc.com/healthcare/vaccine-breakthrough-can-prolong-life-in-brain-cancer-patients-15200601.htm>.

ability of the Company to get these life-saving cancer treatments quickly to market. The Company's DCVax-L treatment more than doubled the percentage of 5-year survivors with this extremely aggressive brain cancer in the Phase 3 trial, and it offers patients and their loved ones significant new hope for the first time in a long time. But, Defendants' illegal market manipulation, done solely for the purpose of reaping substantial, illegal ill-gotten gains, could deprive cancer patients of this important chance for additional years of life.

V. DEFENDANTS' MANIPULATIVE SPOOFING SCHEME

A. Spoofing is a Form of Market Manipulation

45. There are three well established economic assumptions that animate securities markets: (i) all else being equal, increased supply decreases prices and increased demand increases prices; (ii) a security's share price accurately reflects the security's value at that point in time based on the public information available to the market; and (iii) the quotes and orders published in the market reflect legitimate trading interest.

46. Spoofing is an insidious form of market manipulation that undermines the integrity and stability of securities markets by taking advantage of these three economic assumptions to artificially and illegally move the market price of a security either upwards or downwards.

47. Specifically, a market participant, often utilizing high-frequency trading computer systems that operate algorithmic trading programs to maximize the speed of their market access and the execution of their trading strategies, creates a false illusion of excess supply or demand by placing Baiting Orders, either into a Limit Order Book if one exists, or into an IDQS, that are not intended to be executed and have no legitimate economic purpose. These Baiting Orders are entered into the Limit Order Book and/or IDQS to create an illusion of market interest intended to generate a response from other market participants to follow the artificial selling or buying trend

that the Baiting Orders created.

48. A legitimate trader buys when it thinks the price of a security is likely to go higher and sells when it thinks the price of a security will go lower. One of the tell-tale signs of a manipulative spoofer is a rapid reversal of trading direction—a lot of sell orders, followed by buy orders, followed by the cancellation of sell orders—which suggests that the original sell orders were not intended to be executed, but were merely a ploy to drive the price down to “buy low.” Defendants engaged in this distinctive manipulative spoofing pattern again and again during the Relevant Period.

49. Thus, if the spoofer’s goal is to drive the price down, the spoofer enters Baiting Orders to sell, which are intended to “bait” or “trick” investors into entering their own sell orders to minimize or avoid suffering losses in a downward trending market. Shortly after the spoofer places the Baiting Orders to sell, and after those Baiting Orders have lured unsuspecting traders into placing their own orders, the spoofer places orders to buy, or “Executing Purchases”, on the opposite side of the Limit Order Book or IDQS. These Executing Purchases to buy are intended to be executed at the artificially low prices generated by the Baiting Orders to sell. Immediately after executing the Executing Purchases to buy in the Limit Order Book or IDQS, the spoofer cancels all of the Baiting Orders to sell, which completes the spoofing cycle.

50. In short, manipulative spoofing can be seen as high-speed bluffing, in which the spoofer deceives unsuspecting traders into transacting at artificially high or low prices. For example, a spoofer could place Baiting Orders to sell a big block of shares at \$10, when the last sale was at \$10.03. After other sellers rush to match the lower price, the spoofer would quickly pivot, cancel their sell order, and then place Executing Purchases at the \$10 price they generated with the Baiting Order. This scheme can be used multiple times during a trading day, and then

repeated throughout a protracted trading period, as it was here.

51. In the SEC’s “Staff Report on Algorithmic Trading in U.S. Capital Markets,” dated August 5, 2020, the SEC discussed spoofing, describing it as “the submission and cancellation of buy and sell orders without the intention to trade in order to manipulate other traders” and calling it a “harmful strategy” employed by some high-frequency traders. The SEC further stated that spoofing was carried out by “strategically plac[ing] spoofing orders to create the impression of substantial order book imbalances in order to manipulate subsequent prices,” and noted that “stocks targeted for spoofing had higher return volatility, lower market capitalization, lower price level, and lower managerial transparency.”

B. Defendants Engaged in Manipulative Spoofing of NWBO

52. Trading records demonstrate that Defendants engaged in thousands of spoofing episodes and placed tens of millions of Baiting Orders to sell NWBO shares during the Relevant Period. The spoofing scheme perpetrated by the Defendants was intended to, and did, drive NWBO’s market price downward so that Defendants could purchase NWBO shares at artificially lower prices. This scheme was accomplished through the following three stages:

53. First, Defendants flooded the markets with large quantities of Baiting Orders to sell during the “Baiting Period.” These orders had no legitimate purpose and when placed, were not intended to be executed. The sole purpose for the placement of these Baiting Orders to sell was to deceive and mislead market participants into believing that the market price of NWBO’s securities was moving downward.

54. Second, shortly after the Baiting Orders to sell were placed in the Limit Order Book or IDQS, Defendants placed their Executing Purchases on the opposite side of the Limit Order Book or IDQS to purchase NWBO shares at the lower stock prices created by the downward

manipulation of their Baiting Orders to sell.

55. Finally, immediately after the completion of their Executing Purchases to buy NWBO shares at the lower prices, Defendants cancelled and removed all of their Baiting Orders to sell from the Limit Order Book or IDQS.

56. This pattern was repeated by the Defendants multiple times a day and continuously throughout the Relevant Period. Defendants engaged in this distinctive spoofing pattern, each individually a “Spoofing Episode,” again and again, many multiple times a day and continuously throughout the Relevant Period—and at multiples of the average trader—resulting in large profits. Specifically, during the Relevant Period, Defendants submitted 30,464,591 shares of fictitious Baiting Orders on OTC Link LLC and NYSE ARCA Global OTC.

57. As they intended, Defendants’ Baiting Orders led to a substantial sell-side imbalance in Defendants’ order flow, successfully creating artificial selling pressure in the market and inducing other unknowing market participants to submit additional sell orders and artificially drive down the price of NWBO shares.

58. Defendants then took advantage of the artificially depressed price of NWBO shares they created by placing Executing Purchases to purchase a total of 19,300,908 shares below the prevailing best offer prior to entry of the Baiting Orders, pocketing the difference. Almost immediately thereafter, Defendants then cancelled all of the fictitious Baiting Orders.

59. The following table lists by Defendant the share volume of Baiting Orders which were subsequently cancelled, the share volume of just one of the Executing Purchases which were executed at depressed prices per Spoofing Episode,⁸ and the resulting price decline in NWBO

⁸ This table and the examples that follow only include and discuss one Executing Purchase per Spoofing Episode, but Defendants often purchased multiple times at artificially depressed prices per Spoofing Episode.

shares over the Relevant Period:

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	135	3,329,826	478,988	-4.8244%
CITADEL SECURITIES LLC	671	11,598,613	3,274,511	-3.3561%
G1 EXECUTION SERVICES, LLC	161	2,687,551	760,365	-4.5192%
GTS SECURITIES LLC	154	2,722,466	660,556	-5.6843%
INSTINET, LLC	1,142	5,111,436	784,241	-1.8015%
LIME TRADING CORP.	408	2,050,000	1,000,153	-1.911%
VIRTU AMERICAS LLC	178	2,614,141	532,611	-4.4977%

60. Notably, during Spoofing Episodes, Defendants submitted significantly more sell-side share orders per each Executing Purchase than for non-spoofed executed purchases. During the Baiting Period for each Spoofing Episode, Defendants submitted new sell-side orders for an average of 17,170 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases, market participants submitted new sell-side orders for an average of 1,879 shares per purchase. In other words, Defendants' ratio of sell-side orders per executing purchase was more than **9 times** that of non-spoofed executed purchases during Spoofing Episodes.

61. Similarly, during Spoofing Episodes, Defendants cancelled significantly more sell-side orders than after non-spoofed executed purchases. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 16,681 shares in sell-side orders, or 97.15% of the average created volume of 17,170 sell-side shares by Defendants. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 767 shares in sell-side orders, or 40.82% of the average created volume of 1,879 sell-side shares. That is, on average, there were 2,074% or **more than 20 times**

more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

62. In other words, when spoofing the market, Defendants injected exponentially more artificial sell-side order flow prior to buying shares, as measured by: (1) the volume of sell side order flow (814% higher); (2) the cancellation of that order flow (2,074% higher); and (3) the greater share of cancelled sell-side order flow (97.15% vs. 40.82%).

63. The placement and cancellation of Baiting Orders to sell by Defendants throughout the Relevant Period operated as a manipulative fraud on the market. The Baiting Orders were intended to mislead other market participants into believing that the downward movement of NWBO's share price was being caused by the natural forces of supply and demand. The placement and cancellation of thousands of Baiting Orders to Defendants was not in furtherance of any legitimate purpose. Rather, this activity was intended to send a false and misleading pricing signal to the market to trick or bait market participants into executing their own sell orders. This created a "pile-on" effect which drove down NWBO's share price even further, thereby enabling Defendants to purchase NWBO's shares at artificially manipulated lower prices.

64. One particularly egregious example of Defendants' manipulative spoofing activity in NWBO's shares occurred on May 10, 2022. On that day, the market learned excellent news about NWBO: its key drug had met both its primary and secondary endpoints in its GBM clinical trial with statistical significance, displayed an excellent safety profile, and showed meaningful increases in the long-term tails of the survival curves for both newly diagnosed GBM and recurrent GBM patients—on all accounts, excellent news that should have caused NWBO's share price to increase, absent manipulation in the market. However, Defendants spoofed the market for NWBO shares on both OTC Link LLC and NYSE ARCA Global OTC that day, driving down the price of

NWBO shares from a high of \$1.73 to a low of \$0.3862. This staggering *decline of 78%* in the price on a day *with extremely positive news about the Company* was caused by Defendants' relentless and brazen manipulation of the market for NWBO shares.

65. Specifically, on May 10, 2022, Defendants submitted fictitious Baiting Orders to OTC Link LLC and NYSE ARCA Global OTC totaling **2,883,387** shares at share prices ranging from \$1.68 to \$0.40. As intended, the Baiting Orders successfully induced the entry of sell orders from other market participants, and Defendants subsequently purchased a total of 509,062 shares at these depressed prices, which were always below the prevailing best offer prior to entry of the Baiting Orders. Shortly thereafter, Defendants cancelled the fictitious Baiting Orders. After each set of these Baiting Orders, the price of NWBO shares declined, on average, by -11.77%.

66. The following are additional examples of specific spoofing activities by each Defendant during the Relevant Period. These examples are based on detailed trading records that reflect the interplay between the Baiting and Executing Purchases and how each Defendant manipulated downward the market price of NWBO shares on OTC Link LLC and NYSE ARCA Global OTC. Defendants' relentless and repetitive spoofing activities throughout the Relevant Period caused a sustained decline in the market price of NWBO shares from which it did not recover during the Relevant Period.

1. October 12, 2020

67. As the following chart details, on October 12, 2020, Defendants submitted 472,291 shares of fictitious Baiting Orders at share prices ranging from \$1.88 to \$0.905 on OTC Link LLC and NYSE ARCA Global OTC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving down the price

of NWBO shares by -3.108% on average. Defendants then rapidly reversed course and purchased a total of 110,352 shares below the prevailing best offer prior to entry of the Baiting Orders.⁹ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

68. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on October 12, 2020.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	2	5,770	5,100	-2.322%
CITADEL SECURITIES LLC	19	355,179	82,245	-3.241%
GTS SECURITIES LLC	6	106,164	22,279	-2.859%
VIRTU AMERICAS LLC	1	5,178	728	-3.636%

69. During the Baiting Period for each Spoofing Episode that day, Defendants submitted new sell-side orders for an average of 22,583 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 6,006 shares per purchase.

70. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 24,537 shares in sell-side orders, or 108.7% of the created volume of 22,583 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 1,093 shares in sell-side orders, or 18.2% of the created volume of 6,006 sell-side shares.

71. On average, therefore, there were 276% more sell-side shares created in the Baiting

⁹ See footnote 4 above.

Period prior to Executing Purchases compared to non-spoofed executed purchases, and 2,144% more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

72. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (276% higher); (2) the cancellation of that order flow (2,144% higher); and (3) the greater share of cancelled sell-side order flow (108.7% vs. 18.2%).

73. Moreover, Defendants' behavior was inconsistent with bona fide market making. On average, over Baiting Periods that day, Defendants posted 111% more new sell-side orders than new buy-side orders, net of cancellations. Over Cancellation Periods, Defendants cancelled 350% of the sell-side orders created during Baiting Periods, but only 84% of the buy-side orders created during Baiting Periods. This asymmetry in the posting of new orders and order cancellation rates is inconsistent with bona fide market making, which involve purchases and sales in roughly comparable amounts to provide liquidity to customers or other broker-dealers while remaining roughly market neutral.

a) CITADEL SECURITIES LLC

(1) Example Episode: October 12, 2020 - 14:18:25

74. On October 12, 2020 at 14:18:25, the best bid and offer for NWBO was a bid to purchase 5,000 shares at a price of \$1.02 per share and an offer to sell 5,100 shares at a price of \$1.04 per share.

75. From 14:18:25 to 14:20:25, Defendant CITADEL SECURITIES LLC placed 10,850 shares of Baiting Orders at prices ranging from \$1.05 to \$1.03 per share. As of 14:20:25 the submission of these Baiting Orders left defendant CITADEL SECURITIES LLC with an

¹⁰ See footnote 4 above.

imbalanced order book position favoring the sell side consisting of bids to purchase 5,000 shares at a price of \$1.02 per share, and an offer to sell 7,250 shares at a price of \$1.05 per share.

76. Between 14:20:25 and 14:22:25, Defendant CITADEL SECURITIES LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

77. Defendant CITADEL SECURITIES LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, THE VERTICAL TRADING GROUP, LLC had placed orders to sell 100 shares at prices as low as \$1.04, a better price than some or all of the Baiting Orders placed by CITADEL SECURITIES LLC. Parking its Baiting Orders behind orders by other market participants like THE VERTICAL TRADING GROUP, LLC is further evidence that CITADEL SECURITIES LLC was not engaging in legitimate market activity. Only 5% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

78. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 14:20:25, Defendant CITADEL SECURITIES LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 100 shares, at a price of \$1.02 per share, which was below the prevailing best offer of \$1.04 per share.¹⁰

79. Defendant CITADEL SECURITIES LLC began to cancel these Baiting Orders within 2.514 seconds. By 14:22:25, Defendant CITADEL SECURITIES LLC had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by CITADEL SECURITIES LLC. After cancelling the Baiting Orders, Defendant CITADEL SECURITIES LLC had an order book position on the over-the-counter

markets consisting of bids to purchase 9,600 shares at a price of \$1.03 per share and offers to sell 1,000 shares at a price of \$1.04 per share—dramatically reversing the position it had taken only moments before.

2. October 15, 2020

80. As the following chart details, on October 15, 2020, Defendants submitted 714,584 shares of fictitious Baiting Orders at share prices ranging from \$2.40 to \$1.16 on OTC Link LLC and NYSE ARCA Global OTC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving down the price of NWBO shares by -3.96% on average. Defendants then rapidly reversed course and purchased a more than 121,035 shares below the prevailing best offer prior to entry of the Baiting Orders.¹¹ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

81. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on October 15, 2020.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	8	137,916	11,900	-4.677%
CITADEL SECURITIES LLC	29	397,520	85,153	-3.659%
GI EXECUTION SERVICES, LLC	3	17,465	3,500	-5.447%
GTS SECURITIES LLC	5	40,773	2,751	-3.265%
VIRTU AMERICAS LLC	8	120,910	17,731	-4.214%

82. During the Baiting Period for each Spoofing Episode that day, Defendants

¹¹ See footnote 4 above.

submitted new sell-side orders for an average of 27,949 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 10,486 shares per purchase.

83. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 20,103 shares in sell-side orders, or 71.93% of the created volume of 27,949 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 3,305 shares in sell-side orders, or 31.52% of the created volume of 10,486 sell-side shares.

84. On average, therefore, there were 167% more sell-side shares created in the Baiting Period prior to Executing Purchases compared to non-spoofed executed purchases, and 508% more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

85. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (167% higher); (2) the cancellation of that order flow (508% higher); and (3) the greater share of cancelled sell-side order flow (71.93% vs. 31.52%).

86. Moreover, Defendants' behavior was inconsistent with bona fide market making. Over Cancellation Periods, Defendants cancelled 246% of the sell-side orders created during Baiting Periods, but only 77% of the buy-side orders created during Baiting Periods. This asymmetry in order cancellation rates is inconsistent with bona fide market making, which involve purchases and sales in roughly comparable amounts to provide liquidity to customers or other broker-dealers while remaining roughly market neutral.

a) **CANACCORD GENUITY LLC**

(1) Example Episode: October 15, 2020 - 09:28:17

87. On October 15, 2020 at 09:28:17, the best bid and offer for NWBO was a bid to purchase 20,000 shares at a price of \$1.20 per share and an offer to sell 100 shares at a price of \$1.21 per share.

88. From 09:28:17 to 09:30:17, Defendant CANACCORD GENUITY LLC placed 29,400 shares of Baiting Orders at prices ranging from \$2.40 to \$1.18 per share. As of 09:30:17 the submission of these Baiting Orders left Defendant CANACCORD GENUITY LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 2,900 shares at prices ranging from \$0.21 per share to \$1.20 per share, and an offer to sell 10,500 shares at a price of \$1.25 per share.

89. Between 09:30:17 and 09:32:17, Defendant CANACCORD GENUITY LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

90. Defendant CANACCORD GENUITY LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, THE VERTICAL TRADING GROUP, LLC had placed orders to sell 100 shares at prices as low as \$1.30, a better price than some or all of the Baiting Orders placed by CANACCORD GENUITY LLC. Parking its Baiting Orders behind orders by other market participants like THE VERTICAL TRADING GROUP, LLC is further evidence that Defendant CANACCORD GENUITY LLC was not engaging in legitimate market activity. Only 3% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

91. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 09:30:17, Defendant

CANACCORD GENUITY LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 100 shares, at a price of \$1.20 per share, which was below the prevailing best offer of \$1.21 per share.¹²

92. Defendant CANACCORD GENUITY LLC began to cancel these Baiting Orders within 198 milliseconds of its Executing Purchases. By 09:32:17, Defendant CANACCORD GENUITY LLC had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by CANACCORD GENUITY LLC. After cancelling the Baiting Orders, Defendant CANACCORD GENUITY LLC had an order book position on the over-the-counter markets consisting of bids to purchase 11,100 shares at a price of \$1.15 per share and offers to sell 4,900 shares at a price of \$1.18 per share—dramatically reversing the position it had taken only moments before.

3. October 20, 2020

93. As the following chart details, on October 20, 2020, Defendants submitted 851,990 shares of fictitious Baiting Orders at share prices ranging from \$5.00 to \$2.05 on OTC Link LLC and NYSE ARCA Global OTC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving down the price of NWBO shares by -3.244% on average. Defendants then rapidly reversed course and purchased a total of 200,743 shares below the prevailing best offer prior to entry of the Baiting Orders.¹³ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

94. For each Defendant, the following table lists the share volume of Baiting Orders

¹² See footnote 4 above.

¹³ See footnote 4 above.

which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on October 20, 2020.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	5	215,747	12,459	-3.73%
CITADEL SECURITIES LLC	36	330,171	122,419	-3.157%
G1 EXECUTION SERVICES, LLC	12	174,264	50,837	-3.253%
GTS SECURITIES LLC	2	21,450	1,830	-1.778%
INSTINET, LLC	5	31,746	3,900	-5.879%
VIRTU AMERICAS LLC	8	78,612	9,298	-2.037%

95. During the Baiting Period for each Spoofing Episode that day, Defendants submitted new sell-side orders for an average of 18,862 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 7,903 shares per purchase.

96. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 17,602 shares in sell-side orders, or 93.32% of the created volume of 18,862 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 3,261 shares in sell-side orders, or 41.26% of the created volume of 7,903 sell-side shares.

97. On average, therefore, there were 139% more sell-side shares created in the Baiting Period prior to Executing Purchases compared to non-spoofed executed purchases, and 440% more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

98. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (139% higher);

(2) the cancellation of that order flow (440% higher); and (3) the greater share of cancelled sell-side order flow (93.32% vs. 41.26%).

99. Moreover, Defendants' behavior was inconsistent with bona fide market making. Over Cancellation Periods, Defendants cancelled 191% of the sell-side orders created during Baiting Periods, but only 73% of the buy-side orders created during Baiting Periods. This asymmetry in order cancellation rates is inconsistent with bona fide market making, which involve purchases and sales in roughly comparable amounts to provide liquidity to customers or other broker-dealers while remaining roughly market neutral.

a) INSTINET, LLC

(1) Example Episode: October 20, 2020 - 11:37:44

100. On October 20, 2020 at 11:37:44, the best bid and offer for NWBO was a bid to purchase 1,035 shares at a price of \$2.24 per share and an offer to sell 300 shares at a price of \$2.24 per share.

101. From 11:37:44 to 11:39:44, Defendant INSTINET, LLC placed 5,323 shares of Baiting Orders at prices ranging from \$2.25 to \$2.19 per share. As of 11:39:44, the submission of these Baiting Orders left Defendant INSTINET, LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 100 shares at a price of \$2.23 per share, and an offer to sell 1,000 shares at prices ranging from \$2.25 per share to \$2.50 per share.

102. Between 11:39:44 and 11:41:44, Defendant INSTINET, LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

103. Defendant INSTINET, LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, JEFFERIES LLC had placed orders to sell 300 shares at prices as low as \$2.24, a better price than some or all of the

Baiting Orders placed by INSTINET, LLC. Parking its Baiting Orders behind orders by other market participants like JEFFERIES LLC is further evidence that INSTINET, LLC was not engaging in legitimate market activity. Only 11% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

104. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 11:39:44, Defendant INSTINET, LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 100 shares, at a price of \$2.23 per share, which was below the prevailing best offer of \$2.24 per share.¹⁴

105. Defendant INSTINET, LLC began to cancel these Baiting Orders within 3.342 seconds. By 11:41:44, Defendant INSTINET, LLC, had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by INSTINET, LLC. After cancelling the Baiting Orders, Defendant INSTINET, LLC had an order book position on the over-the-counter markets consisting of no bids and offers to sell 500 shares at a price of \$2.50 per share—dramatically reversing the position it had taken only moments before.

4. October 27, 2020

106. As the following chart details, on October 27, 2020, Defendants submitted 2,962,168 shares of fictitious Baiting Orders at share prices ranging from \$2.72 to \$0.98 on OTC Link LLC and NYSE ARCA Global OTC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving

¹⁴ See footnote 4 above.

down the price of NWBO shares by -6.45% on average. Defendants then rapidly reversed course and purchased a total of 298,075 shares below the prevailing best offer prior to entry of the Baiting Orders.¹⁵ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

107. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on October 27, 2020.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	12	807,744	15,315	-7.251%
CITADEL SECURITIES LLC	22	1,077,312	172,766	-6.632%
G1 EXECUTION SERVICES, LLC	16	485,125	54,838	-6.575%
GTS SECURITIES LLC	12	330,389	28,334	-6.821%
INSTINET, LLC	9	59,488	9,700	-2.71%
VIRTU AMERICAS LLC	14	202,110	17,122	-7.422%

108. During the Baiting Period for each Spoofing Episode that day, Defendants submitted new sell-side orders for an average of 54,271 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 14,073 shares per purchase.

109. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 63,624 shares in sell-side orders, or 117.2% of the created volume of 54,271 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 10,286 shares in sell-side orders, or 73.09% of the created volume of 14,073 sell-side shares.

110. On average, therefore, there were 286% more sell-side shares created in the Baiting

¹⁵ See footnote 4 above.

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Period prior to Executing Purchases compared to non-spoofed executed purchases, and 519% more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

111. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (286% higher); (2) the cancellation of that order flow (519% higher); and (3) the greater share of cancelled sell-side order flow (117.2% vs. 73.09%).

112. Moreover, Defendants' behavior was inconsistent with bona fide market making. Over Cancellation Periods, Defendants cancelled 285% of the sell-side orders created during Baiting Periods, but only 94% of the buy-side orders created during Baiting Periods. This asymmetry in order cancellation rates is inconsistent with bona fide market making, which involve purchases and sales in roughly comparable amounts to provide liquidity to customers or other broker-dealers while remaining roughly market neutral.

a) VIRTU AMERICAS LLC

(1) Example Episode: October 27, 2020 - 10:25:42

113. On October 27, 2020 at 10:25:42, the best bid and offer for NWBO was a bid to purchase 2,990 shares at a price of \$1.16 per share and an offer to sell 57,655 shares at a price of \$1.17 per share.

114. From 10:25:42 to 10:27:42, Defendant VIRTU AMERICAS LLC placed 1,400 shares of Baiting Orders at prices ranging from \$1.21 to \$1.17 per share. As of 10:27:42 the submission of these Baiting Orders left Defendant VIRTU AMERICAS LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 1,000 shares at a price of \$1.16 per share, and an offer to sell 1,500 shares at a price of \$1.21 per share.

115. Between 10:27:42 and 10:29:42, Defendant VIRTU AMERICAS LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

116. Defendant VIRTU AMERICAS LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, ASCENDIANT CAPITAL MARKETS, LLC had placed orders to sell 100 shares at prices as low as \$1.18, a better price than some or all of the Baiting Orders placed by VIRTU AMERICAS LLC. Parking its Baiting Orders behind orders by other market participants like ASCENDIANT CAPITAL MARKETS, LLC is further evidence that VIRTU AMERICAS LLC was not engaging in legitimate market activity. Only 15% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

117. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 10:27:42, Defendant VIRTU AMERICAS LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 100 shares, at a price of \$1.16 per share, which was below the prevailing best offer of \$1.17 per share.¹⁶

118. Defendant VIRTU AMERICAS LLC began to cancel these Baiting Orders within 4.967 seconds. By 10:29:42, Defendant VIRTU AMERICAS LLC, had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by VIRTU AMERICAS LLC. After cancelling the Baiting Orders, Defendant VIRTU AMERICAS LLC had an order book position on the over-the-counter markets consisting of no bids and offers to sell 5,600 shares at a price of \$1.20 per share—dramatically reversing the position it had taken only moments before.

¹⁶ See footnote 4 above.

119. As the following chart details, on November 02, 2020, Defendants submitted 57,273 shares of fictitious Baiting Orders at share prices ranging from \$1.20 to \$1.05 on OTC Link LLC and NYSE ARCA Global OTC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving down the price of NWBO shares by -2.268% on average. Defendants then rapidly reversed course and purchased a total of 20,406 shares below the prevailing best offer prior to entry of the Baiting Orders.¹⁷ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

120. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on November 02, 2020.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CITADEL SECURITIES LLC	2	19,877	10,806	-2.836%
GI EXECUTION SERVICES, LLC	3	31,556	9,100	-2.702%
INSTINET, LLC	2	5,840	500	-1.048%

121. During the Baiting Period for each Spoofing Episode that day, Defendants submitted new sell-side orders for an average of 19,993 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 2,263 shares per purchase.

122. During the Cancellation Period following the Executing Purchases, Defendants

¹⁷ See footnote 4 above.

19,993 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 781 shares in sell-side orders, or 34.49% of the created volume of 2,263 sell-side shares.

123. On average, therefore, there were 784% more sell-side shares created in the Baiting Period prior to Executing Purchases compared to non-spoofed executed purchases, and 1414% more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

124. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (784% higher); (2) the cancellation of that order flow (1,414% higher); and (3) the greater share of cancelled sell-side order flow (59.09% vs. 34.49%).

125. Moreover, Defendants' behavior was inconsistent with bona fide market making. Over Cancellation Periods, Defendants cancelled 112% of the sell-side orders created during Baiting Periods, but only 32% of the buy-side orders created during Baiting Periods. This asymmetry in order cancellation rates is inconsistent with bona fide market making, which involve purchases and sales in roughly comparable amounts to provide liquidity to customers or other broker-dealers while remaining roughly market neutral.

a) GI EXECUTION SERVICES, LLC

(1) Example Episode: November 02, 2020 - 09:49:30

126. On November 02, 2020 at 09:49:30, the best bid and offer for NWBO was a bid to purchase 1,171 shares at a price of \$1.12 per share and an offer to sell 21,700 shares at a price of \$1.14 per share.

127. From 09:49:30 to 09:51:30, Defendant G1 EXECUTION SERVICES, LLC placed 21,545 shares of Baiting Orders at a price of \$1.16 per share. As of 09:51:30 the submission of these Baiting Orders left defendant G1 EXECUTION SERVICES, LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 10,000 shares at a price of \$1.12 per share, and an offer to sell 28,445 shares at a price of \$1.14 per share.

128. Between 09:51:30 and 09:53:30, defendant G1 EXECUTION SERVICES, LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

129. Defendant G1 EXECUTION SERVICES, LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, PUMA CAPITAL, LLC had placed orders to sell 100 shares at prices as low as \$1.14, a better price than some or all of the Baiting Orders placed by G1 EXECUTION SERVICES, LLC. Parking its Baiting Orders behind orders by other market participants like PUMA CAPITAL, LLC is further evidence that G1 EXECUTION SERVICES, LLC was not engaging in legitimate market activity. Only 3% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

130. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 09:51:30, Defendant G1 EXECUTION SERVICES, LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 6,000 shares, at a price of \$1.12 per share, which was below the prevailing best offer of \$1.14 per share.¹⁸

131. Defendant G1 EXECUTION SERVICES, LLC began to cancel these Baiting

¹⁸ See footnote 4 above.

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Orders within 3.299 seconds. By 09:55:30, Defendant G1 EXECUTION SERVICES, LLC had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by G1 EXECUTION SERVICES, LLC. After cancelling the Baiting Orders, Defendant G1 EXECUTION SERVICES, LLC had an order book position on the over-the-counter markets consisting of bids to purchase 6,000 shares at a price of \$1.12 per share and offers to sell 1,100 shares at a price of \$1.16 per share—dramatically reversing the position it had taken only moments before.

6. November 18, 2020

132. As the following chart details, on November 18, 2020, Defendants submitted 23,850 shares of fictitious Baiting Orders at share prices ranging from \$2.80 to \$1.27 on OTC Link LLC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving down the price of NWBO shares by -2.532% on average. Defendants then rapidly reversed course and purchased a total of 1,550 shares below the prevailing best offer prior to entry of the Baiting Orders.¹⁹ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

133. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on November 18, 2020.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	1	4,900	1,100	-2.92%

¹⁹ See footnote 4 above.

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Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CITADEL SECURITIES LLC	1	9,950	350	-1.575%
G1 EXECUTION SERVICES, LLC	1	9,000	100	-3.101%

134. During the Baiting Period for each Spoofing Episode that day, Defendants submitted new sell-side orders for an average of 17,884 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 3,371 shares per purchase.

135. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 10,950 shares in sell-side orders, or 61.23% of the created volume of 17,884 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 907 shares in sell-side orders, or 26.9% of the created volume of 3,371 sell-side shares.

136. On average, therefore, there were 431% more sell-side shares created in the Baiting Period prior to Executing Purchases compared to non-spoofed executed purchases, and 1108% more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

137. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (431% higher); (2) the cancellation of that order flow (1,108% higher); and (3) the greater share of cancelled sell-side order flow (61.23% vs. 26.9%).

138. Moreover, Defendants' behavior was inconsistent with bona fide market making. On average, over Baiting Periods that day, Defendants posted 1,630% more new sell-side orders than new buy-side orders, net of cancellations. Over Cancellation Periods, Defendants cancelled

94% of the sell-side orders created during Baiting Periods, but only 39% of the buy-side orders created during Baiting Periods. This asymmetry in the posting of new orders and order cancellation rates is inconsistent with bona fide market making, which involve purchases and sales in roughly comparable amounts to provide liquidity to customers or other broker-dealers while remaining roughly market neutral.

a) G1 EXECUTION SERVICES, LLC

(1) Example Episode: November 18, 2020 - 09:59:59

139. On November 18, 2020 at 09:59:59, the best bid and offer for NWBO was a bid to purchase 15,000 shares at a price of \$1.26 per share and an offer to sell 6,000 shares at a price of \$1.29 per share.

140. From 09:59:59 to 10:01:59, Defendant G1 EXECUTION SERVICES, LLC placed 9,000 shares of Baiting Orders at a price of \$1.32 per share. As of 10:01:59, the submission of these Baiting Orders left Defendant G1 EXECUTION SERVICES, LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 2,100 shares at a price of \$1.27 per share, and an offer to sell 10,000 shares at a price of \$1.30 per share.

141. Between 10:01:59 and 10:03:59, Defendant G1 EXECUTION SERVICES, LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

142. Defendant G1 EXECUTION SERVICES, LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, JANE STREET MARKETS, LLC had placed orders to sell 1,000 shares at prices as low as \$1.29, a better price than some or all of the Baiting Orders placed by G1 EXECUTION SERVICES, LLC. Parking its Baiting Orders behind orders by other market participants like JANE STREET MARKETS, LLC is further evidence that G1 EXECUTION SERVICES, LLC was not engaging

in legitimate market activity. Only 3% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

143. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 10:01:59, Defendant G1 EXECUTION SERVICES, LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 100 shares, at a price of \$1.27 per share, which was below the prevailing best offer of \$1.29 per share.²⁰

144. Defendant G1 EXECUTION SERVICES, LLC began to cancel these Baiting Orders within 19.9 seconds. By 10:03:59, Defendant G1 EXECUTION SERVICES, LLC had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by G1 EXECUTION SERVICES, LLC. After cancelling the Baiting Orders, Defendant G1 EXECUTION SERVICES, LLC had an order book position on the over-the-counter markets consisting of bids to purchase 21,000 shares at a price of \$1.25 per share and offers to sell 10,000 shares at a price of \$1.28 per share—dramatically reversing the position it had taken only moments before.

7. December 24, 2020

145. As the following chart details, on December 24, 2020, Defendants submitted 330,199 shares of fictitious Baiting Orders at share prices ranging from \$3.70 to \$1.62 on OTC Link LLC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving down the price of NWBO shares by - 4.192% on average. Defendants then rapidly reversed course and purchased a total of 42,796 shares

²⁰ See footnote 4 above.

below the prevailing best offer prior to entry of the Baiting Orders.²¹ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

146. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on December 24, 2020.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	2	60,385	2,206	-7.005%
CITADEL SECURITIES LLC	8	162,265	29,523	-3.645%
GI EXECUTION SERVICES, LLC	2	53,300	4,910	-5.559%
GTS SECURITIES LLC	4	29,699	5,857	-4.10%
VIRTU AMERICAS LLC	1	24,550	300	-0.5814%

147. During the Baiting Period for each Spoofing Episode that day, Defendants submitted new sell-side orders for an average of 35,418 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 11,548 shares per purchase.

148. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 28,039 shares in sell-side orders, or 79.16% of the created volume of 35,418 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 1,271 shares in sell-side orders, or 11.01% of the created volume of 11,548 sell-side shares.

149. On average, therefore, there were 207% more sell-side shares created in the Baiting Period prior to Executing Purchases compared to non-spoofed executed purchases, and 2105%

²¹ See footnote 4 above.

more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

150. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (207% higher); (2) the cancellation of that order flow (2,105% higher); and (3) the greater share of cancelled sell-side order flow (79.16% vs. 11.01%).

a) CANACCORD GENUITY LLC

(1) Example Episode: December 24, 2020 - 10:49:52

151. On December 24, 2020 at 10:49:52, the best bid and offer for NWBO was a bid to purchase 1,100 shares at a price of \$1.69 per share and an offer to sell 1,100 shares at a price of \$1.72 per share.

152. From 10:49:52 to 10:51:52, Defendant CANACCORD GENUITY LLC placed 18,476 shares of Baiting Orders at prices ranging from \$3.40 to \$1.64 per share. As of 10:51:52 the submission of these Baiting Orders left Defendant CANACCORD GENUITY LLC with an imbalanced order book position favoring the sell side consisting of no bids and an offer to sell 14,576 shares at a price of \$1.72 per share.

153. Between 10:51:52 and 10:53:52, Defendant CANACCORD GENUITY LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

154. Defendant CANACCORD GENUITY LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, JANE STREET MARKETS, LLC had placed orders to sell 1,000 shares at prices as low as \$1.72, a better price than some or all of the Baiting Orders placed by CANACCORD GENUITY LLC. Parking its Baiting Orders behind orders by other market participants like JANE STREET

MARKETS, LLC is further evidence that CANACCORD GENUITY LLC was not engaging in legitimate market activity. None of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

155. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 10:51:52, Defendant CANACCORD GENUITY LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 1,306 shares, at a price of \$1.70 per share, which was below the prevailing best offer of \$1.72 per share.²²

156. Defendant CANACCORD GENUITY LLC began to cancel these Baiting Orders within 3.504 seconds. By 10:53:52, Defendant CANACCORD GENUITY LLC had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by CANACCORD GENUITY LLC. After cancelling the Baiting Orders, Defendant CANACCORD GENUITY LLC had an order book position on the over-the-counter markets consisting of bids to purchase 1,000 shares at a price of \$1.64 per share and offers to sell 5,545 shares at a price of \$1.67 per share—dramatically reversing the position it had taken only moments before.

8. February 01, 2021

157. As the following chart details, on February 01, 2021, Defendants submitted 28,924 shares of fictitious Baiting Orders at share prices ranging from \$1.67 to \$1.53 on OTC Link LLC and NYSE ARCA Global OTC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving down the price

²² See footnote 4 above.

of NWBO shares by -2.013% on average. Defendants then rapidly reversed course and purchased a total of 10,923 shares below the prevailing best offer prior to entry of the Baiting Orders.²³ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

158. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on February 01, 2021.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CITADEL SECURITIES LLC	4	23,524	7,168	-1.746%
GTS SECURITIES LLC	1	2,400	755	-2.516%
LIME TRADING CORP.	1	3,000	3,000	-2.581%

159. During the Baiting Period for each Spoofing Episode that day, Defendants submitted new sell-side orders for an average of 6,950 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 795 shares per purchase.

160. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 8,549 shares in sell-side orders, or 123% of the created volume of 6,950 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 743 shares in sell-side orders, or 93.44% of the created volume of 795 sell-side shares.

161. On average, therefore, there were 775% more sell-side shares created in the Baiting Period prior to Executing Purchases compared to non-spoofed executed purchases, and 1051%

²³ See footnote 4 above.

more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

162. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (775% higher); (2) the cancellation of that order flow (1,051% higher); and (3) the greater share of cancelled sell-side order flow (123% vs. 93.44%).

a) GTS SECURITIES LLC

(1) Example Episode: February 01, 2021 - 09:28:51

163. On February 01, 2021 at 09:28:51, the best bid and offer for NWBO was a bid to purchase 2,600 shares at a price of \$1.56 per share and an offer to sell 509 shares at a price of \$1.59 per share.

164. From 09:28:51 to 09:30:51, Defendant GTS SECURITIES LLC placed 2,400 shares of Baiting Orders at a price of \$1.67 per share. As of 09:30:51 the submission of these Baiting Orders left Defendant GTS SECURITIES LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 1,525 shares at a price of \$1.56 per share, and an offer to sell 2,500 shares at a price of \$1.59 per share.

165. Between 09:30:51 and 09:32:51, Defendant GTS SECURITIES LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

166. Defendant GTS SECURITIES LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, JANE STREET MARKETS, LLC had placed orders to sell 1,000 shares at prices as low as \$1.60, a better price than some or all of the Baiting Orders placed by GTS SECURITIES LLC. Parking its Baiting Orders behind orders by other market participants like JANE STREET MARKETS, LLC is further

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evidence that GTS SECURITIES LLC was not engaging in legitimate market activity. Only 4% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

167. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 09:30:51, Defendant GTS SECURITIES LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 755 shares, at a price of \$1.56 per share, which was below the prevailing best offer of \$1.59 per share.²⁴

168. Defendant GTS SECURITIES LLC began to cancel these Baiting Orders within 3.457 seconds. By 09:32:51, Defendant GTS SECURITIES LLC had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by GTS SECURITIES LLC. After cancelling the Baiting Orders, Defendant GTS SECURITIES LLC had an order book position on the over-the-counter markets consisting of bids to purchase 485 shares at a price of \$1.55 per share and offers to sell 3,800 shares at a price of \$1.64 per share—dramatically reversing the position it had taken only moments before.

b) LIME TRADING CORP.

(1) Example Episode: February 01, 2021 - 15:46:21

169. On February 01, 2021 at 15:46:21, the best bid and offer for NWBO was a bid to purchase 3,150 shares at a price of \$1.53 per share and an offer to sell 3,115 shares at a price of \$1.55 per share.

170. From 15:46:21 to 15:48:21, Defendant LIME TRADING CORP. placed 3,000 shares of Baiting Orders at prices ranging from \$1.56 to \$1.54 per share. As of 15:48:21 the

²⁴ See footnote 4 above.

submission of these Baiting Orders left Defendant LIME TRADING CORP. with an imbalanced order book position favoring the sell side consisting of bids to purchase 3,000 shares at a price of \$1.53 per share, and an offer to sell 6,000 shares at a price of \$1.55 per share.

171. Between 15:48:21 and 15:50:21, Defendant LIME TRADING CORP. did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

172. Defendant LIME TRADING CORP. parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, JANE STREET MARKETS, LLC had placed orders to sell 1,000 shares at prices as low as \$1.55, a better price than some or all of the Baiting Orders placed by LIME TRADING CORP. Parking its Baiting Orders behind orders by other market participants like JANE STREET MARKETS, LLC is further evidence that LIME TRADING CORP. was not engaging in legitimate market activity. Only 4% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

173. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 15:48:21, Defendant LIME TRADING CORP. took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 3,000 shares, at a price of \$1.53 per share, which was below the prevailing best offer of \$1.55 per share.²⁵

174. Defendant LIME TRADING CORP. began to cancel these Baiting Orders within 19.1 seconds. By 15:50:21, Defendant LIME TRADING CORP., had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by LIME TRADING CORP. After cancelling the Baiting Orders, Defendant LIME

²⁵ See footnote 4 above.

TRADING CORP. had an order book position on the over-the-counter markets consisting of no bids and offers to sell 6,000 shares at a price of \$1.53 per share—dramatically reversing the position it had taken only moments before.

9. May 17, 2021

175. As the following chart details, on May 17, 2021, Defendants submitted 495,874 shares of fictitious Baiting Orders at share prices ranging from \$2.05 to \$1.77 on OTC Link LLC and NYSE ARCA Global OTC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving down the price of NWBO shares by -2.446% on average. Defendants then rapidly reversed course and purchased a total of 126,035 shares below the prevailing best offer prior to entry of the Baiting Orders.²⁶ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

176. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on May 17, 2021.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	1	24,200	100	-1.015%
CITADEL SECURITIES LLC	17	118,400	37,299	-2.543%
GTS SECURITIES LLC	2	34,924	5,505	-1.173%
INSTINET, LLC	13	64,400	16,008	-2.532%
LIME TRADING CORP.	30	243,000	64,081	-2.328%
VIRTU AMERICAS LLC	4	10,950	3,042	-3.624%

177. During the Baiting Period for each Spoofing Episode that day, Defendants

²⁶ See footnote 4 above.

submitted new sell-side orders for an average of 12,049 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 6,728 shares per purchase.

178. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 12,300 shares in sell-side orders, or 102.1% of the created volume of 12,049 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 286 shares in sell-side orders, or 4.25% of the created volume of 6,728 sell-side shares.

179. On average, therefore, there were 79% more sell-side shares created in the Baiting Period prior to Executing Purchases compared to non-spoofed executed purchases, and 4202% more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

180. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (79% higher); (2) the cancellation of that order flow (4202% higher); and (3) the greater share of cancelled sell-side order flow (102.1% vs. 4.25%).

181. Moreover, Defendants' behavior was inconsistent with bona fide market making. On average, over Baiting Periods that day, Defendants posted 254% more new sell-side orders than new buy-side orders, net of cancellations. Over Cancellation Periods, Defendants cancelled 179% of the sell-side orders created during Baiting Periods, but only 77% of the buy-side orders created during Baiting Periods. This asymmetry in the posting of new orders and order cancellation rates is inconsistent with bona fide market making, which involve purchases and sales in roughly comparable amounts to provide liquidity to customers or other broker-dealers while remaining

roughly market neutral.

a) *VIRTU AMERICAS LLC*

(1) Example Episode: May 17, 2021 - 11:17:58

182. On May 17, 2021 at 11:17:58, the best bid and offer for NWBO was a bid to purchase 1,000 shares at a price of \$1.85 per share and an offer to sell 1,100 shares at a price of \$1.86 per share.

183. From 11:17:58 to 11:19:58, Defendant VIRTU AMERICAS LLC placed 3,800

shares of Baiting Orders at a price of \$1.93 per share. As of 11:19:58 the submission of these Baiting Orders left Defendant VIRTU AMERICAS LLC with an imbalanced order book position favoring the sell side consisting of no bids and an offer to sell 2,000 shares at a price of \$1.87 per share.

184. Between 11:19:58 and 11:21:58, Defendant VIRTU AMERICAS LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

185. Defendant VIRTU AMERICAS LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, JANE STREET MARKETS, LLC had placed orders to sell 1,000 shares at prices as low as \$1.86, a better price than some or all of the Baiting Orders placed by VIRTU AMERICAS LLC. Parking its Baiting Orders behind orders by other market participants like JANE STREET MARKETS, LLC is further evidence that VIRTU AMERICAS LLC was not engaging in legitimate market activity. Only 2% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

186. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 11:19:58 Defendant VIRTU

²⁷ See footnote 4 above.
²⁸ See footnote 4 above.

189. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing

Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders. a total of 77,977 shares below the prevailing best offer prior to entry of the Baiting Orders.²⁸ of NWBO shares by -2.623% on average. Defendants then rapidly reversed course and purchased induced the entry of sell orders from other market participants, artificially driving down the price but instead, planned to cancel them before placing the orders. The Baiting Orders successfully and NYSE ARCA Global OTC. Defendants never intended for these Baiting Orders to be filled, shares of fictitious Baiting Orders at share prices ranging from \$2.50 to \$1.83 on OTC Link LLC 188. As the following chart details, on May 9, 2022, Defendants submitted 632,901

10. May 9, 2022

of \$1.93 per share—dramatically reversing the position it had taken only moments before. of bids to purchase 1,217 shares at a price of \$1.87 per share and offers to sell 100 shares at a price VIRTU AMERICAS LLC had an order book position on the over-the-counter markets consisting into the market by VIRTU AMERICAS LLC. After cancelling the Baiting Orders, Defendant Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected 3.466 seconds. By 11:21:58, Defendant VIRTU AMERICAS LLC, had cancelled all of its Baiting 187. Defendant VIRTU AMERICAS LLC began to cancel these Baiting Orders within

best offer of \$1.86 per share.²⁷

Purchases to buy a total of 500 shares, at a price of \$1.85 per share, which was below the prevailing AMERICAS LLC took advantage of this artificial downward pressure and executed Executing

Episode which were executed at depressed prices, and the resulting price decline in NWBO shares on May 9, 2022.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	7	104,500	15,672	-3.714%
CITADEL SECURITIES LLC	14	227,105	29,627	-2.124%
G1 EXECUTION SERVICES, LLC	4	3,330	1,731	-5.174%
INSTINET, LLC	46	183,466	15,133	-2.247%
VIRTU AMERICAS LLC	3	114,500	15,814	-4.772%

190. During the Baiting Period for each Spoofing Episode that day, Defendants submitted new sell-side orders for an average of 11,986 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 4,013 shares per purchase.

191. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 12,094 shares in sell-side orders, or 100.9% of the created volume of 11,986 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 396 shares in sell-side orders, or 9.86% of the created volume of 4,013 sell-side shares.

192. On average, therefore, there were 199% more sell-side shares created in the Baiting Period prior to Executing Purchases compared to non-spoofed executed purchases, and 2957% more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

193. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (199% higher); (2) the cancellation of that order flow (2,957% higher); and (3) the greater share of cancelled sell-side order flow (100.9% vs. 9.86%).

a) *INSTINET, LLC*

(1) Example Episode: May 9, 2022 - 14:44:35

194. On May 9, 2022 at 14:44:35, the best bid and offer for NWBO was a bid to purchase 1,000 shares at a price of \$1.89 per share and an offer to sell 452 shares at a price of \$1.90 per share.

195. From 14:44:35 to 14:46:35, Defendant INSTINET, LLC placed 10,580 shares of Baiting Orders at prices ranging from \$1.92 to \$1.90 per share. As of 14:46:35, the submission of these Baiting Orders left Defendant INSTINET, LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 5,005 shares at prices ranging from \$1.87 per share to \$1.89 per share, and an offer to sell 5,744 shares at prices ranging from \$1.91 per share to \$1.92 per share.

196. Between 14:46:35 and 14:48:35, Defendant INSTINET, LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

197. Defendant INSTINET, LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, JANE STREET MARKETS, LLC had placed orders to sell 1,000 shares at prices as low as \$1.91, a better price than some or all of the Baiting Orders placed by INSTINET, LLC. Parking its Baiting Orders behind orders by other market participants like JANE STREET MARKETS, LLC is further evidence that INSTINET, LLC was not engaging in legitimate market activity. Only 4% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

198. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 14:46:35, Defendant INSTINET,

LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 133 shares, at a price of \$1.89 per share, which was below the prevailing best offer of \$1.90 per share.²⁹

199. Defendant INSTINET, LLC began to cancel these Baiting Orders within 1.184 seconds. By 14:48:35 Defendant INSTINET, LLC, had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by INSTINET, LLC. After cancelling the Baiting Orders, Defendant INSTINET, LLC had an order book position on the over-the-counter markets consisting of bids to purchase 5,505 shares at prices ranging from \$1.87 per share to \$1.88 per share and offers to sell 3,800 shares at a price of \$1.90 per share—dramatically reversing the position it had taken only moments before.

11. May 10, 2022

200. As the following chart details, on May 10, 2022, Defendants submitted 2,883,387 shares of fictitious Baiting Orders at share prices ranging from \$1.68 to \$0.40 on OTC Link LLC and NYSE ARCA Global OTC. Defendants never intended for these Baiting Orders to be filled, but instead, planned to cancel them before placing the orders. The Baiting Orders successfully induced the entry of sell orders from other market participants, artificially driving down the price of NWBO shares by -11.77% on average. Defendants then rapidly reversed course and purchased a total of 509,062 shares below the prevailing best offer prior to entry of the Baiting Orders.³⁰ Shortly thereafter, Defendants cancelled all of the fictitious Baiting Orders.

201. For each Defendant, the following table lists the share volume of Baiting Orders which were subsequently cancelled, share volume of one of the Executing Purchases per Spoofing

²⁹ See footnote 4 above.

³⁰ See footnote 4 above.

Episode which were executed at depressed prices, and the resulting price decline in NWBO shares

on May 10, 2022.

Defendant	No. of Episodes	Baiting Orders	Executing Purchases	Average Price Decline
CANACCORD GENUITY LLC	10	190,338	14,416	-11.95%
CITADEL SECURITIES LLC	29	977,605	104,969	-11.38%
G1 EXECUTION SERVICES, LLC	8	282,089	25,650	-16.63%
GTS SECURITIES LLC	33	1,078,066	287,760	-11.01%
INSTINET, LLC	9	83,125	4,250	-11.30%
VIRTU AMERICAS LLC	11	272,164	72,017	-11.74%

202. During the Baiting Period for each Spoofing Episode that day, Defendants submitted new sell-side orders for an average of 50,426 shares per Executing Purchase. During the same time window prior to non-spoofed executed purchases that day, market participants submitted new sell-side orders for an average of 4,177 shares per purchase.

203. During the Cancellation Period following the Executing Purchases, Defendants cancelled an average of 47,473 shares in sell-side orders, or 94.15% of the created volume of 50,426 sell-side shares. During the same time window as the Cancellation Period following non-spoofed executed purchases, market participants cancelled an average of 2,210 shares in sell-side orders, or 52.9% of the created volume of 4,177 sell-side shares.

204. On average, therefore, there were 1,107% more sell-side shares created in the Baiting Period prior to Executing Purchases compared to non-spoofed executed purchases, and 2,048% more sell-side shares cancelled in the Cancellation Period following Executing Purchases compared to non-spoofed executed purchases.

205. Defendants thus injected more artificial sell-side order flow than non-spoofed orders prior to buying shares, as measured by (1) the volume of sell side order flow (1,107% higher); (2) the cancellation of that order flow (2,048% higher); and (3) the greater share of

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cancelled sell-side order flow (94.15% vs. 52.9%).

206. Moreover, Defendants' behavior was inconsistent with bona fide market making. On average, over Baiting Periods that day, Defendants posted 127% more new sell-side orders than new buy-side orders, net of cancellations. Over Cancellation Periods, Defendants cancelled 353% of the sell-side orders created during Baiting Periods, but only 88% of the buy-side orders created during Baiting Periods. This asymmetry in the posting of new orders and order cancellation rates is inconsistent with bona fide market making, which involve purchases and sales in roughly comparable amounts to provide liquidity to customers or other broker-dealers while remaining roughly market neutral.

a) GTS SECURITIES LLC

(1) Example Episode: May 10, 2022 - 12:51:43

207. On May 10, 2022 at 12:51:43, the best bid and offer for NWBO was a bid to purchase 100 shares at a price of \$1.01 per share and an offer to sell 2,000 shares at a price of \$0.565 per share.

208. From 12:51:43 to 12:53:43, Defendant GTS SECURITIES LLC placed 4,000 shares of Baiting Orders at a price of \$0.5985 per share. As of 12:53:43 the submission of these Baiting Orders left Defendant GTS SECURITIES LLC with an imbalanced order book position favoring the sell side consisting of no bids and an offer to sell 5,000 shares at a price of \$0.57 per share.

209. Between 12:53:43 and 12:55:43, Defendant GTS SECURITIES LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

210. Defendant GTS SECURITIES LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders,

\$0.565, a better price than some or all of the Baiting Orders placed by GTS SECURITIES LLC. Parking its Baiting Orders behind orders by other market participants like CELADON FINANCIAL GROUP LLC is further evidence that GTS SECURITIES LLC was not engaging in legitimate market activity. Only 6% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

211. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 12:53:43, Defendant GTS SECURITIES LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 3,500 shares, at a price of \$0.56 per share, which was below the prevailing best offer of \$0.565 per share.³¹

212. Defendant GTS SECURITIES LLC began to cancel these Baiting Orders within 1.477 seconds. By 12:55:43, Defendant GTS SECURITIES LLC, had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by GTS SECURITIES LLC. After cancelling the Baiting Orders, Defendant GTS SECURITIES LLC had an order book position on the over-the-counter markets consisting of bids to purchase 5,445 shares at a price of \$0.521 per share and offers to sell 1,000 shares at a price of \$0.5985 per share—dramatically reversing the position it had taken only moments before.

b) CITADEL SECURITIES LLC

(1) Example Episode: May 10, 2022 - 11:25:43

213. On May 10, 2022 at 11:25:43, the best bid and offer for NWBO was a bid to purchase 100 shares at a price of \$1.01 per share and an offer to sell 31,500 shares at a price of

³¹ See footnote 4 above.

\$0.90 per share.

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214. From 11:25:43 to 11:27:43, Defendant CITADEL SECURITIES LLC placed 30,958 shares of Baiting Orders at prices ranging from \$0.95 to \$0.8801 per share. As of 11:27:43 the submission of these Baiting Orders left Defendant CITADEL SECURITIES LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 4,000 shares at a price of \$0.88 per share, and an offer to sell 7,730 shares at a price of \$0.9163 per share.

215. Between 11:27:43 and 11:29:43, Defendant CITADEL SECURITIES LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

216. Defendant CITADEL SECURITIES LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, ASCENDIANT CAPITAL MARKETS, LLC had placed orders to sell 1,000 shares at prices as low as \$0.9301, a better price than some or all of the Baiting Orders placed by CITADEL SECURITIES LLC. Parking its Baiting Orders behind orders by other market participants like ASCENDIANT CAPITAL MARKETS, LLC is further evidence that CITADEL SECURITIES LLC was not engaging in legitimate market activity. Only 6% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

217. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 11:27:43 Defendant CITADEL SECURITIES LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 2,000 shares, at a price of \$0.88 per share, which was below the prevailing best offer of \$0.90 per share.³²

³² See footnote 4 above.

218. Defendant CITADEL SECURITIES LLC began to cancel these Baiting Orders within 3.177 seconds. By 11:29:43, Defendant CITADEL SECURITIES LLC had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by CITADEL SECURITIES LLC. After cancelling the Baiting Orders, Defendant CITADEL SECURITIES LLC had an order book position on the over-the-counter markets consisting of bids to purchase 1,060 shares at a price of \$0.94 per share and offers to sell 1,000 shares at a price of \$0.95 per share—dramatically reversing the position it had taken only moments before.

c) CANACCORD GENUITY LLC

(1) Example Episode: May 10, 2022 - 09:45:08

219. On May 10, 2022 at 09:45:08, the best bid and offer for NWBO was a bid to purchase 4,850 shares at a price of \$1.43 per share and an offer to sell 26,095 shares at a price of \$1.44 per share.

220. From 09:45:08 to 09:47:08, Defendant CANACCORD GENUITY LLC placed 9,740 shares of Baiting Orders at prices ranging from \$1.48 to \$1.42 per share. As of 09:47:08, the submission of these Baiting Orders left Defendant CANACCORD GENUITY LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 800 shares at prices ranging from \$1.42 per share to \$1.43 per share, and an offer to sell 1,000 shares at a price of \$1.44 per share.

221. Between 09:47:08 and 09:49:08, Defendant CANACCORD GENUITY LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

222. Defendant CANACCORD GENUITY LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders,

ASCENDIANT CAPITAL MARKETS, LLC had placed orders to sell 100 shares at prices as low as \$1.45, a better price than some or all of the Baiting Orders placed by CANACCORD GENUITY LLC. Parking its Baiting Orders behind orders by other market participants like ASCENDIANT CAPITAL MARKETS, LLC is further evidence that CANACCORD GENUITY LLC was not engaging in legitimate market activity. Only 6% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

223. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 09:47:08, Defendant CANACCORD GENUITY LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 100 shares, at a price of \$1.43 per share, which was below the prevailing best offer of \$1.44 per share.³³

224. Defendant CANACCORD GENUITY LLC began to cancel these Baiting Orders within 24.57 seconds. By 09:49:08, Defendant CANACCORD GENUITY LLC had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by CANACCORD GENUITY LLC. After cancelling the Baiting Orders, Defendant CANACCORD GENUITY LLC had an order book position on the over-the-counter markets consisting of bids to purchase 100 shares at a price of \$1.42 per share and offers to sell 5,100 shares at prices ranging from \$1.46 per share to \$143.00 per share—dramatically reversing the position it had taken only moments before.

d) GI EXECUTION SERVICES, LLC

(1) Example Episode: May 10, 2022 - 11:52:48

225. On May 10, 2022 at 11:52:48, the best bid and offer for NWBO was a bid to

³³ See footnote 4 above.

226. From 11:52:48 to 11:54:48, Defendant G1 EXECUTION SERVICES, LLC placed 30,407 shares of Baiting Orders at a price of \$0.8001 per share. As of 11:54:48 the submission of these Baiting Orders left Defendant G1 EXECUTION SERVICES, LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 2,550 shares at a price of \$0.76 per share, and an offer to sell 40,407 shares at a price of \$0.8101 per share.

227. Between 11:54:48 and 11:56:48, Defendant G1 EXECUTION SERVICES, LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

228. Defendant G1 EXECUTION SERVICES, LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, JANE STREET MARKETS, LLC had placed orders to sell 1,000 shares at prices as low as \$0.7881, a better price than some or all of the Baiting Orders placed by G1 EXECUTION SERVICES, LLC. Parking its Baiting Orders behind orders by other market participants like JANE STREET MARKETS, LLC is further evidence that G1 EXECUTION SERVICES, LLC was not engaging in legitimate market activity. Only 6% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

229. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 11:54:48, Defendant G1 EXECUTION SERVICES, LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 1,550 shares, at a price of \$0.76 per share, which was below the prevailing best offer of \$0.7601 per share.³⁴

³⁴ See footnote 4 above.

230. Defendant G1 EXECUTION SERVICES, LLC began to cancel these Baiting Orders within 27.74 seconds. By 11:56:48 Defendant G1 EXECUTION SERVICES, LLC, had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by G1 EXECUTION SERVICES, LLC. After cancelling the Baiting Orders, Defendant G1 EXECUTION SERVICES, LLC had an order book position on the over-the-counter markets consisting of bids to purchase 11,500 shares at a price of \$0.70 per share and offers to sell 1,000 shares at a price of \$0.8001 per share—dramatically reversing the position it had taken only moments before.

e) VIRTU AMERICAS LLC

(1) Example Episode: May 10, 2022 - 12:17:03

231. On May 10, 2022 at 12:17:03, the best bid and offer for NWBO was a bid to purchase 100 shares at a price of \$1.01 per share and an offer to sell 6,741 shares at a price of \$0.6401 per share.

232. From 12:17:03 to 12:19:03, Defendant VIRTU AMERICAS LLC placed 15,000 shares of Baiting Orders at a price of \$0.65 per share. As of 12:19:03, the submission of these Baiting Orders left Defendant VIRTU AMERICAS LLC with an imbalanced order book position favoring the sell side consisting of bids to purchase 2,000 shares at a price of \$0.64 per share, and an offer to sell 16,000 shares at a price of \$0.65 per share.

233. Between 12:19:03 and 12:21:03, Defendant VIRTU AMERICAS LLC did not sell any shares of NWBO, consistent with the fictitious nature of the Baiting Orders.

234. Defendant VIRTU AMERICAS LLC parked these Baiting Orders behind orders placed by other unsuspecting traders. For example, when submitting the Baiting Orders, ASCENDIANT CAPITAL MARKETS, LLC had placed orders to sell 1,000 shares at prices as

low as \$0.6401, a better price than some or all of the Baiting Orders placed by VIRTU AMERICAS LLC. Parking its Baiting Orders behind orders by other market participants like ASCENDIANT CAPITAL MARKETS, LLC is further evidence that VIRTU AMERICAS LLC was not engaging in legitimate market activity. Only 6% of the non-spoofed executed purchases that day had the purchaser previously park sell-side orders behind other market participants.

235. The Baiting Orders successfully induced the entry of sell orders from other market participants, driving the price of NWBO shares downward. At 12:19:03, Defendant VIRTU AMERICAS LLC took advantage of this artificial downward pressure and executed Executing Purchases to buy a total of 1,000 shares, at a price of \$0.64 per share, which was below the prevailing best offer of \$0.6401 per share.³⁵

236. Defendant VIRTU AMERICAS LLC began to cancel these Baiting Orders within 28.92 seconds. By 12:21:03, Defendant VIRTU AMERICAS LLC had cancelled all of its Baiting Orders, eliminating the artificial sell-side imbalance that had been falsely conveyed and injected into the market by VIRTU AMERICAS LLC. After cancelling the Baiting Orders, Defendant VIRTU AMERICAS LLC had an order book position on the over-the-counter markets consisting of bids to purchase 12,000 shares at a price of \$0.62 per share and offers to sell 1,000 shares at a price of \$0.6595 per share—dramatically reversing the position it had taken only moments before.

C. Defendants Intentionally Hid their Manipulative Spoofing Scheme

237. As described above, throughout the Relevant Period, each of the Defendants hid their manipulative spoofing scheme by, *inter alia*, deliberately “parking” fictitious Baiting Orders behind orders placed by other unsuspecting traders.

238. By parking the Baiting Orders, Defendants ensured that those Baiting Orders were

³⁵ See footnote 4 above.

extraordinarily unlikely to be executed, and thus shows that Defendants never intended for their

Baiting Orders to be executed.

239. For example, on May 10, 2022 from 12:51:43 to 12:53:43, Defendant GTS SECURITIES LLC added **4,000** Baiting Orders to the sell side of the over-the-counter markets at a price of \$0.5985 per share. As of 12:53:43 the submission of these Baiting Orders left Defendant GTS SECURITIES LLC with an extremely imbalanced order book position favoring the sell side consisting of *no bids* and an offer to sell **5,000** shares at a price of \$0.57 per share.

240. Defendant GTS parked these fictitious Baiting Orders behind orders placed by other unsuspecting traders; for example, CELADON FINANCIAL GROUP LLC had placed orders to sell 1,000 shares at prices as low as \$0.565, a better price than some or all of the Baiting Orders placed by GTS SECURITIES LLC. Thus, by parking its Baiting Orders behind CELADON FINANCIAL GROUP LLC orders, Defendant GTS ensured that they were unlikely to ever be executed. These Baiting Orders were then cancelled once Defendant GTS was able to execute its Executing Purchases at the artificial price created by those same Baiting Orders.

D. Defendants Acted with Scienter

241. Based on the alleged facts herein, Defendants acted with scienter. Defendants knowingly or with severe recklessness engaged in unlawful conduct intended to—and in fact did—deceive, manipulate, or defraud the market for NWBO shares and participants in that market, including Plaintiff.

242. First, each Defendant specifically designed and implemented algorithmic trading programs to execute their spoofing schemes. Their algorithms were programmed to, and did, generate trading patterns that involved the placement and cancellation of tens of millions Baiting Orders to sell in the Limit Order Book and/or IQDS on OTC Link LLC and NYSE ARCA Global

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OTC that were never intended to be executed during the Relevant Period. Moreover, each Defendant—all of which are sophisticated entities which utilize cutting edge technology—closely monitored, modeled, and analyzed the performance, impact, and effects of their algorithmic trading program throughout the Relevant Period, including the spoofing pattern which the algorithm executed again and again on NWBO stock during the Relevant Period with similar effects each time.

243. Second, each Defendant's trading activities were approved by corporate officials sufficiently knowledgeable about the trading practices of each Defendant such that each Defendant knew that they were engaging in illegal spoofing.

244. Third, as registered broker-dealers, Defendants knew and/or were required to know that it was unlawful to place Baiting Orders to sell in a Limit Order Book or IDQS that were never intended to be executed in order to trick market participants into selling shares of NWBO stock.

245. Fourth, as registered broker-dealers, Defendants were required, pursuant to FINRA Rule 2020, to have internal policies, procedures and systems that detected and prohibited manipulative or fraudulent trading devices or schemes. As registered broker-dealers, Defendants were also required, pursuant to FINRA Rules 5210, Supplementary Material .02; Rule 1220 and Exchange Rule 575, Disruptive Practices Prohibited, to detect and prevent manipulative or fraudulent trading that originated from algorithmic high-speed trading under the supervision and control of their firm. Indeed, during the Relevant Period each Defendant filed an "Annual Certification of Compliance and Supervisory Processes," pursuant to FINRA Report 3130, in which they confirmed that they:

- (A) establish[ed], maintain[ed] and review[ed] policies and procedures reasonably designed to achieve compliance with applicable FINRA rules, Municipal Securities Rulemaking Board ("MSRB") rules and federal securities laws and regulations;
- (B) modif[ie]d such policies and procedures as business,

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regulatory and legislative changes and events dictate, and (C) test[ed] the effectiveness of such policies and procedures on a periodic basis, the timing and extent of which is reasonably designed to ensure continuing compliance with FINRA rules, MSRB rules and federal securities laws and regulations.

246. Given Defendants' obligation to monitor, detect, and prevent manipulative or fraudulent trading and their FINRA Report 3130s in which they stated that they did, in fact, do so, Defendants either intentionally manipulated the market through their spoofing scheme, or were highly reckless in allowing such behavior to occur.

247. Fifth, Defendants regularly and intentionally "parked" fictitious Baiting Orders behind orders placed by other unsuspecting traders—which meant they were extraordinarily unlikely to be executed—in order to hide their spoofing scheme. Parking such Baiting Orders is further evidence that Defendants did not intend for its orders to be filled, and knew that it was placing the orders as a manipulative technique and was not engaging in legitimate market activity.

248. Sixth, Defendants' Baiting Orders frequently left Defendants with an imbalanced order book position favoring the sell side. Despite these imbalanced order book positions, Defendants often did not sell *any* shares of NWBO after posting Baiting Orders. This is consistent with the fictitious nature of the Baiting Orders, and indicates that Defendants never intended to execute any of its numerous Baiting Orders; instead, Defendants placed the Baiting Orders in order to create artificial selling pressure and induce other market participants to submit additional sell orders, and thus artificially drive down the price of NWBO shares. This behavior is contrary to the behavior of an ordinary trader who buys when it thinks the price of a security is likely to go higher and sells when it thinks the price of a security will go lower, and thus rarely, if ever, develops such an imbalance that never get executed.

249. Seventh, the short time period between the placement and cancellation of their Baiting Orders is further indicative of scienter. During each Spoofing Episode, Defendants placed

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and then cancelled the Baiting Orders within one to two minutes, and at times seconds and even milliseconds. This practice, which occurred thousands of times over the Relevant Period, indicates that Defendants never intended to execute the Baiting Orders.

250. Eighth, the concentration of cancelled Baiting Orders during the limited period when each spoofing event occurred is also indicative of scienter. During each Spoofing Episode, Defendants cancelled all of the Baiting Orders, sometimes amounting to tens of thousands of Baiting Orders, in a matter of seconds and sometimes milliseconds, all of which had been placed by Defendants at most mere minutes earlier.

251. Ninth, the size of the Baiting Orders that were cancelled, in comparison to the size of bona-fide sell-side orders that were executed by Defendants is also indicative of scienter. During each Spoofing Episode, Defendants placed and subsequently cancelled a median of 4,500 shares in Baiting Orders while executing a median of zero executed sell-side orders. The stark contrast between the share volume of Baiting Orders and executed sell-side orders during each Spoofing Episode indicates that Defendants were manipulating the market by using Baiting Orders as tools to generate artificial prices, rather than making a genuine attempt to sell NWBO shares.

252. Tenth, the ratio of cancelled Baiting Orders compared to executed bona-fide orders to sell is also indicative of scienter. In the median Spoofing Episode, Defendants placed and subsequently cancelled 4,500 sell-side shares in Baiting Orders, while in contrast executing zero sell-side orders. A sell-side cancellation rate of 100% is a strong indication that Defendants never intended to execute those Baiting Orders.

253. Eleventh, the size of executed sell-side orders compared to Executing Purchases by Defendants is also indicative of scienter. In the median Spoofing Episode, Defendants executed 2,000 shares in Executing Purchases while in contrast not executing *any* sell-side orders. The stark

contrast between the share volume of Executing Purchases and sell-side orders further indicates that Defendants were manipulating the market by using Baiting Orders as tools to generate artificial prices at which to place Executing Purchases at favorable prices.

254. Twelfth, the ratio of executed sell-side orders compared to Executing Purchases by Defendants is thus also indicative of scienter. In the median Spoofing Episode, Defendants executed 2,000 shares of Executing Purchases while not executing any sell-side orders. A ratio of 2,000-to-0 further indicates that Defendants never intended to execute its Baiting Orders to sell.

255. Thirteenth, Defendants carried out thousands of Spoofing Episodes over the Relevant Period, and often multiple episodes per trading day. The repetition of this pattern of placing fictitious Baiting Orders which create an artificial price, Executing Purchases at the artificial price, and then cancelling all of the Baiting Orders, is indicative of scienter.

256. Fourteenth, Defendants' behavior was inconsistent with bona fide market making. On average, over Baiting Periods, Defendants posted 721% more new sell-side orders than new buy-side orders, net of cancellations. Over Cancellation Periods, Defendants cancelled 268% of the sell-side orders created during Baiting Periods, but only 85% of the buy-side orders created during Baiting Periods. This asymmetry in the posting of new orders and order cancellation rates is inconsistent with bona fide market making, which involve purchases and sales in roughly comparable amounts to provide liquidity to customers or other broker-dealers while remaining roughly market neutral.

257. Finally, there is an extremely low statistical likelihood that the price variations for each of the Spoofing Episodes occurred naturally. The market impact of these Spoofing Episodes was material and statistically significant.

258. In addition, Defendants had a strong motive to spoof the shares of NWBO stock

and engage in their manipulative scheme. By manipulating down the share price of NWBO, Defendants were able to make at least hundreds of millions in aggregate profits by purchasing hundreds of millions of shares of NWBO at artificially depressed prices.

E. Loss Causation

259. During the Relevant Period, there were spoofing events that occurred on 395 of 1,171—or nearly 34%—trading days. As set forth in the chart below, Plaintiff sold over 49 million shares of stock in 97 distinct transactions at share prices artificially depressed by Defendants' manipulative spoofing on 51 of those days:

Agreement Date	Shares Sold	Sale Price	Pricing Date	# of Spoofing Episodes	Closing Price on Pricing Date	Average Return to Spoofing Episodes
1/2/18	1,499,936	\$0.19				
			12/19/17	2*	\$0.2202	-2.80%
1/8/18	323,379	\$0.33				
			12/19/17	2*	\$0.2202	-2.80%
1/8/18	562,919	\$0.19				
			12/19/17	2*	\$0.2202	-2.80%
1/8/18	526,787	\$0.20				
			11/21/17	1	\$0.2290	-3.81%
			12/19/17	2*	\$0.2202	-2.80%
1/11/18	562,225	\$0.19				
			12/19/17	2*	\$0.2202	-2.80%
1/18/18	562,919	\$0.19				
			12/19/17	2*	\$0.2202	-2.80%
2/8/18	1,129,804	\$0.25				
			2/23/18	1	\$0.2880	-3.85%
			2/27/18	1	\$0.2920	-2.95%
			2/28/18	1	\$0.2930	-1.69%
2/9/18	430,061	\$0.25				
			1/25/18	1	\$0.3075	-6.15%
			2/23/18	1	\$0.2880	-3.85%
			2/28/18	1	\$0.2930	-1.69%
2/12/18	429,235	\$0.25				

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			1/25/18	1	\$0.3075	-6.15%
			2/23/18	1	\$0.2880	-3.85%
			2/27/18	1	\$0.2920	-2.95%
			2/28/18	1	\$0.2930	-1.69%
3/1/18	446,589	\$0.23				
			3/28/18	1	\$0.2585	-2.25%
3/1/18	1,207,659	\$0.23				
			3/28/18	1	\$0.2585	-2.25%
3/1/18	261,243	\$0.40				
			3/27/18	1	\$0.2770	-1.32%
			3/28/18	1	\$0.2585	-2.25%
4/17/18	9,203,442	\$0.07				
			3/28/18	1	\$0.2585	-2.25%
			4/24/18	1	\$0.1750	-1.13%
4/17/18	549,355	\$0.20				
			4/16/18	1	\$0.2290	-1.75%
4/17/18	1,438,409	\$0.20				
			4/16/18	1	\$0.2290	-1.75%
5/8/18	586,339	\$0.18				
			4/24/18	1	\$0.1750	-1.13%
5/8/18	692,261	\$0.15				
			4/24/18	1	\$0.1750	-1.13%
5/8/18	687,960	\$0.16				
			4/24/18	1	\$0.1750	-1.13%
5/8/18	1,852,640	\$0.15				
			4/24/18	1	\$0.1750	-1.13%
6/21/18	1,999,458	\$0.18				
			6/12/18	2	\$0.2520	-1.43%
			7/24/18	1	\$0.2135	-2.85%
7/2/18	574,559	\$0.18				
			6/12/18	2	\$0.2520	-1.43%
			6/14/18	3	\$0.2582	-0.23%
			8/1/18	1*	\$0.2150	-2.31%
7/2/18	576,374	\$0.18				
			6/12/18	2	\$0.2520	-1.43%
			6/14/18	3	\$0.2582	-0.23%
			8/1/18	1*	\$0.2150	-2.31%
8/1/18	598,317	\$0.17				

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			7/24/18	1	\$0.2135	-2.85%
8/1/18	596,991	\$0.17				
			7/24/18	1	\$0.2135	-2.85%
4/3/19	426,543	\$0.23				
			3/28/19	1*	\$0.2798	-1.81%
4/11/19	1,113,044	\$0.23				
			3/28/19	1*	\$0.2798	-1.81%
4/23/19	695,066	\$0.35				
			3/28/19	1*	\$0.2798	-1.81%
5/17/19	459,249	\$0.23				
			6/3/19	1	\$0.2700	-0.74%
6/3/19	1,139,050	\$0.22				
			5/23/19	1	\$0.3220	-1.22%
6/3/19	453,273	\$0.22				
			5/23/19	1	\$0.3220	-1.22%
1/2/20	761,905	\$0.21				
			12/31/20	4	\$1.5250	-3.32%
10/1/20	62,549	\$2.60				
			9/2/20	15	\$0.5504	-4.66%
			9/3/20	5	\$0.5495	-6.94%
			9/9/20	1	\$0.6300	-5.92%
			9/11/20	1	\$0.5620	-3.39%
10/1/20	166,564	\$0.49				
			9/2/20	15	\$0.5504	-4.66%
			9/3/20	5	\$0.5495	-6.94%
			9/9/20	1	\$0.6300	-5.92%
			9/11/20	1	\$0.5620	-3.39%
10/1/20	328,577	\$0.49				
			9/2/20	15	\$0.5504	-4.66%
			9/3/20	5	\$0.5495	-6.94%
			9/9/20	1	\$0.6300	-5.92%
			9/11/20	1	\$0.5620	-3.39%
10/12/20	30,637	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	147,059	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	12,255	\$0.82				
			10/9/20	1	\$0.8310	-2.44%

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10/12/20	370,000	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	500,000	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	140,845	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	612,745	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	183,824	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	122,549	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	50,000	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	612,745	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	42,892	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	98,039	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	245,098	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	61,275	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	122,549	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	122,549	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	306,373	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	30,637	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	1,225,490	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	61,275	\$0.82				
			10/9/20	1	\$0.8310	-2.44%
10/12/20	122,549	\$0.82				
			10/9/20	1	\$0.8310	-2.44%

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10/12/20	98,039	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	245,098	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	275,000	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	150,000	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	61,275	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	122,549	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	61,275	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	2,500,000	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	612,745	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	367,647	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	61,275	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	183,824	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	75,000	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	136,667	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	600,000	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	1,250,000	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	50,000	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	30,637	\$0.82			
			10/9/20	1	\$0.8310 -2.44%
10/12/20	122,549	\$0.82			
			10/9/20	1	\$0.8310 -2.44%

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11/10/20	75,935	\$2.15				
			10/13/20	17	\$1.0100	-4.75%
			10/14/20	4*	\$1.0600	-2.66%
			10/27/20	85*	\$1.1300	-6.45%
			10/30/20	2	\$1.1100	-2.80%
			11/9/20	4	\$1.1100	-6.87%
11/10/20	59,291	\$2.08				
			10/13/20	17	\$1.0100	-4.75%
			10/14/20	4*	\$1.0600	-2.66%
			10/27/20	85*	\$1.1300	-6.45%
			10/30/20	2	\$1.1100	-2.80%
			11/9/20	4	\$1.1100	-6.87%
11/10/20	53,745	\$1.75				
			10/13/20	17	\$1.0100	-4.75%
			10/14/20	4*	\$1.0600	-2.66%
			10/30/20	2	\$1.1100	-2.80%
			11/9/20	4	\$1.1100	-6.87%
1/15/21	94,463	\$1.34				
			12/16/20	1	\$1.2900	-1.60%
			12/21/20	1	\$1.3300	-4.41%
			12/22/20	2*	\$1.3500	-1.33%
			1/14/21	4	\$1.3150	-2.03%
1/15/21	121,782	\$1.35				
			12/16/20	1	\$1.2900	-1.60%
			12/21/20	1	\$1.3300	-4.41%
			12/22/20	2*	\$1.3500	-1.33%
			1/14/21	4	\$1.3150	-2.03%
1/19/21	185,155	\$1.14				
			12/21/20	1	\$1.3300	-4.41%
			12/22/20	2*	\$1.3500	-1.33%
			1/14/21	4	\$1.3150	-2.03%
			1/15/21	3	\$1.3500	-1.70%
1/19/21	68,790	\$1.37				
			12/21/20	1	\$1.3300	-4.41%
			12/22/20	2*	\$1.3500	-1.33%
			1/14/21	4	\$1.3150	-2.03%
			1/15/21	3	\$1.3500	-1.70%
2/1/21	102,902	\$1.17				

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			1/13/21	1	\$1.4000	-2.10%
			1/14/21	4	\$1.3150	-2.03%
			1/15/21	3	\$1.3500	-1.70%
			1/19/21	8	\$1.4050	-1.26%
			1/25/21	4	\$1.3900	-1.41%
2/1/21	135,922	\$1.17				
			1/13/21	1	\$1.4000	-2.10%
			1/14/21	4	\$1.3150	-2.03%
			1/15/21	3	\$1.3500	-1.70%
			1/19/21	8	\$1.4050	-1.26%
			1/25/21	4	\$1.3900	-1.41%
3/2/21	86,605	\$1.47				
			2/19/21	4	\$1.4650	-1.87%
			2/22/21	6	\$1.4000	-1.58%
			2/23/21	31	\$1.3500	-5.96%
			2/25/21	11*	\$1.4200	-1.45%
			2/26/21	8	\$1.4500	-1.72%
3/2/21	123,547	\$1.28				
			2/19/21	4	\$1.4650	-1.87%
			2/22/21	6	\$1.4000	-1.58%
			2/23/21	31	\$1.3500	-5.96%
			2/25/21	11*	\$1.4200	-1.45%
			2/26/21	8	\$1.4500	-1.72%
3/2/21	92,436	\$1.30				
			2/19/21	4	\$1.4650	-1.87%
			2/22/21	6	\$1.4000	-1.58%
			2/23/21	31	\$1.3500	-5.96%
			2/25/21	11*	\$1.4200	-1.45%
			2/26/21	8	\$1.4500	-1.72%
			3/5/21	13	\$1.3600	-3.08%
			3/8/21	3	\$1.3600	-1.24%
			3/9/21	4	\$1.4300	-1.97%
			3/10/21	4	\$1.4200	-1.15%
			4/1/21	29*	\$1.3950	-3.29%
3/15/21	566,783	\$1.16				
			2/22/21	6	\$1.4000	-1.58%
			2/23/21	31	\$1.3500	-5.96%
			3/4/21	15	\$1.3800	-2.82%

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			3/5/21	13	\$1.3600	-3.08%
			3/8/21	3	\$1.3600	-1.24%
4/5/21	104,827	\$1.22				
			3/5/21	13	\$1.3600	-3.08%
			3/8/21	3	\$1.3600	-1.24%
			3/9/21	4	\$1.4300	-1.97%
			3/10/21	4	\$1.4200	-1.15%
			4/1/21	29*	\$1.3950	-3.29%
4/5/21	99,809	\$1.20				
			3/5/21	13	\$1.3600	-3.08%
			3/8/21	3	\$1.3600	-1.24%
			3/9/21	4	\$1.4300	-1.97%
			3/10/21	4	\$1.4200	-1.15%
			4/1/21	29*	\$1.3950	-3.29%
4/5/21	352,284	\$1.18				
			3/5/21	13	\$1.3600	-3.08%
			3/8/21	3	\$1.3600	-1.24%
			3/9/21	4	\$1.4300	-1.97%
			3/10/21	4	\$1.4200	-1.15%
			4/1/21	29*	\$1.3950	-3.29%
12/3/21	208,861	\$0.79				
			12/2/21	1	\$0.7900	-0.63%
12/12/21	666,667	\$0.60				
			12/10/21	5*	\$0.5951	-3.18%
12/12/21	1,000,000	\$0.60				
			12/10/21	5*	\$0.5951	-3.18%
12/12/21	250,000	\$0.60				
			12/10/21	5*	\$0.5951	-3.18%
1/24/22	51,948	\$0.77				
			1/24/22	1	\$0.7950	-5.30%
3/14/22	142,857	\$0.70				
			3/14/22	1	\$0.6970	-0.69%

* denotes a day where there were Spoofing Episodes in the final hour of trading.

260. For example, on Sunday, December 12, 2021, plaintiff sold 1.9 million shares at a price equal to the closing price of NWBO stock on Friday, December 10, 2021. That day, NWBO's share price fell from an opening price of \$0.74 per share to close at \$0.60 per share—a decline of

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18.9%. By comparison, the S&P 500 reached a record high that day, and the OTCQB index (where NWBO is listed) declined only 0.50%. By all accounts, the decline in the price of NWBO shares on December 10, 2021 was unusual and extraordinary in magnitude.

261. The majority of the decline in the price of NWBO shares on December 10, 2021 occurred from 15:00:00 to 16:00:00, during which the share price declined 12%. All five Spoofing Episodes in NWBO's shares that day occurred in the final hour of trading, beginning at 15:00:04 and ending at 15:52:49—*minutes prior to the close of trading*. But for Defendants' unlawful spoofing activity, the price of NWBO shares would not have declined by 12% and Plaintiff would have sold shares at a price higher than \$0.68 per share.

262. Defendants' fraudulent trading activities had both a temporary and long-term adverse effect on the market price of NWBO's securities. The artificially depressed price of a Spoofing Episode may generally not fully recover to the price that existed prior to the Spoofing Episode. When spoofing events occur continuously throughout the day and continue without interruption over a protracted period of time, the long-term cumulative effect of spoofing places enormous downward pressure on the market price of a security, which is persistent and long-lasting.

263. The impact of this spoofing activity extended beyond the specific spoofing cycle (*i.e.*, orders, trades, and cancellations), because the market neither immediately nor fully rebounded from the manipulated prices once each of the Spoofing Episodes was completed. In fact, during the Relevant Period, on at least 395 of the 1,171 trading days, a large fraction of trading in NWBO stock on OTC Link LLC and NYSE ARCA Global OTC took place at manipulated prices.

264. While each Spoofing Episode had a small negative impact on the price of NWBO's

shares, the placement and cancellation of Baiting Orders throughout the Relevant Period had the cumulative effect of driving NWBO's share price down during the Relevant Period.

265. Defendants' wrongful conduct proximately caused Plaintiff's loss that Plaintiff suffered when the market price of NWBO shares was being driven downward.

VI. CLAIMS FOR RELIEF

A. First Claim for Relief for Spoofing in Violation of Section 10(b) of the Exchange Act of 1934 and Rule 10b-5(a) and (c) Promulgated Thereunder Against Defendants

266. Plaintiff incorporates by reference paragraphs 1 through 265 as if more fully set forth herein.

267. During the Relevant Period, Defendants engaged in and employed devices, schemes, illegal acts, practices, and a course of conduct, that were intended to manipulate the market price of NWBO shares which were listed and traded on the OTC Link LLC and NYSE ARCA Global OTC trading venues, and which operated as a fraud and deceit upon NWBO.

268. As a direct and proximate result of Defendants' wrongful conduct, NWBO suffered damages in that it sold shares at manipulative prices, in reliance on an assumption of an efficient market free of manipulation. NWBO would not have sold shares at the prices sold if they had been aware of Defendants' manipulative conduct which artificially affected the process of NWBO shares.

B. Second Claim for Relief for Spoofing in Violation of Section 9(a)(2) of The Securities Exchange Act of 1934 Against Defendants

269. Plaintiff incorporates by reference paragraphs 1 through 265 as if more fully set forth herein.

270. Based upon the conduct described above, Defendants' manipulative scheme violated Section 9(a)(2) of the Securities Exchange Act of 1934, which makes it unlawful to engage

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in a series of manipulative transactions "in any security . . . creating actual or apparent active trading in such security, or raising or depressing the price of such security, for the purpose of inducing the purchase or sale of such security by others."

271. By reason of the conduct described above, Defendants directly used the mails, or instrumentalities of interstate commerce, or a facility of a national securities exchange, to affect alone or with one or more other persons, a series of transactions in NWBO's securities that created actual or apparent trading in such securities or raising or depressing the price of such securities for the purpose of inducing the purchase or sale of such securities by others, engaged in the market manipulation strategy of spoofing which artificially affected the prices of NWBO's securities that NWBO sold.

272. Defendants' conscious misbehavior or recklessness artificially affected the price of NWBO's shares, that NWBO sold during the Relevant Period. NWBO's financial injuries would not have been as extensive but for the Defendants' conscious misbehavior or recklessness.

C. Third Claim for Relief for New York Common Law Fraud

273. Plaintiff incorporates by reference paragraphs 1 through 265 as if more fully set forth herein.

274. By placing and then cancelling Baiting Orders in their abusive spoofing scheme, Defendants each knowingly or recklessly injected into the market false and misleading information concerning the fake supply of NWBO shares that appeared available for trading. This interfered with the natural market forces of supply and demand and artificially drove the price of the shares downward. When the Company sold its NWBO stock during the Relevant Period, it suffered damages that were directly and proximately caused by Defendants' fraud.

275. When the Company sold its NWBO shares during the Relevant Period, it did not

possess any specific facts indicating that the price of NWBO's share was being manipulated and therefore, it relied on the efficiency of the market that had been unlawfully manipulated it suffered damages that were directly and proximately caused by Defendants' fraud. As a result, the Company suffered financial losses that were directly and proximately caused by the Defendants' fraud.

D. Fourth Claim for Injunctive Relief

276. Plaintiff incorporates by reference paragraphs 1 through 265 as if more fully set forth herein.

277. Plaintiff seeks to permanently enjoin Defendants from engaging in spoofing conduct that affects NWBO's share price. Defendants' actions identified herein have caused, continue to cause, and will cause future permanent and irreparable harm to Plaintiff.

278. Such harm is not merely pecuniary. Defendants' conduct has significantly impaired the ability of the Company to raise funds from the public markets, and thus could impact the ability of the Company to get these life-saving cancer treatments quickly to market, robbing people of their lives and health.

279. The balance of the equities favors an injunction to prevent Defendants from continuing to spoof NWBO stock. The harm to Plaintiff and GBM patients is significant. Through its clinical trials, DCVax-L has shown unprecedented improvements over existing standard of care in long-term survival curve tails for both newly diagnosed and recurrent GBM patients. In contrast, the potential harm to Defendants of injunction is insignificant; Defendants would merely be required to halt their illegal activity. Thus, the public interest, and public health, is best served by enjoining Defendants' spoofing behavior.

280. As noted throughout this Complaint, it is extremely likely that Plaintiff will succeed

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on the merits in this case. All evidence to be presented, including trading records and Defendants' own trading algorithms, will support the position that Defendants were manipulating NWBO's share price through spoofing.

281. As such, this Court should enter a permanent injunction enjoining Defendants from engaging in spoofing conduct that affects NWBO stock price.

VII. PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that this Court enter a judgment:

- A. Finding that Defendants violated the federal securities and New York state laws as alleged in this complaint;
- B. Ordering Defendants to pay damages as a result of their unlawful conduct in an amount to be determined at trial;
- C. Ordering permanent injunctive relief as described herein;
- D. Awarding reasonable attorney's fees and costs together with all available pre and post judgment interest; and
- E. Granting such other and further relief as the Court deems just and appropriate.

VIII. DEMAND FOR JURY TRIAL

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, the Plaintiff demands trial by jury in this action of all issues so triable.

Dated: December 1, 2022
New York, New York

Respectfully submitted,

By: Laura H. Posner

Laura H. Posner
Michael B. Eisenkraft
Jessica (Ji Eun) Kim

Counsel for Plaintiff

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